TÉCNICO LISBOA

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BIENNIAL REPORT 2015-2016

1.
Welcome Letter

This is the second time this report has been published, - the first one was issued in January 2015 (DEI Annual Report 2014) -, and covered the period 2015-2016, making possible a critical appreciation of the evolution of our main activities and outcomes at TÉCNICO LISBOA and in society in recent years.

The outstanding evolution can be seen is the result of sustained efforts in delivering better results in our ongoing activities and better real time monitoring focused on continuously improving processes. Innovative although sometimes disruptive initiatives, focused on increasing the pedagogic success ratio of our students, have been developed and implemented. By strengthening and diversifying the human resources and the knowledge base of our academic staff, it has been possible to enable the on-going collective design of a strategic vision and the will to bring it to fruition it in the near future.

As outgoing Department Head (2013-2016) I am proud of the present mind set of DEI: its energy; ambition; commitment to teaching and research and the openness to learn and evolve. I am sure that the next leaders of DEI will find a fertile ground on which to build higher levels of academic excellence with and for our students and professors.

Lisbon, 28 October 2016
José Tribolet
President of DEI

DÉBORA RODRIGUES / TÉCNICO

2.
DEI at Técnico Lisboa

The Department of Computer Science and Engineering (DEI – Departamento de Engenharia Informática) of Instituto Superior Técnico (TÉCNICO LISBOA), University of Lisbon, began its activities in September 1998.

DEI's mission is to contribute to the development of society by promoting university teaching of excellence in computer science and engineering (CS&E) in both undergraduate, master and postgraduate education. To achieve this goal, DEI supports activities in the research, development and innovation domains at the highest international level, in close cooperation with the key Portuguese research and devel- opment (R&D) institutes and industries.

This Department is responsible for and has been actively involved in the curricular development of TÉCNICO LISBOA´s Undergraduate, Master (MSc) and Phd degrees in Computer Science and Engineering. The Undergaduate course, which corresponds to the Bologna 1st cycle, is offered both in the Alameda and Tagus campuses. The undergraduate curricula is aligned with ACM and IEEE curricular guidelines and the latest restructurarion was particularly influenced by the 2013 versions. In partnership with the Electrical and Computer Engineering Department, it is co-responsible for the undergraduate and MSc degrees in Telecommunications and Informatic Engineering.

The Department is internally organized around five areas: architecture and operating systems; computer graphics and multimedia; artificial intelligence; algorithms and programming methodology and information systems. Its professors and students are involved in R&D projects through the Institute of Systems and Computer Engineering (INESC – Instituto de Engenharia de Sistemas e Computadores), the Institute of Telecommunications and the Institute for Systems and Robotics (ISR), which are all part of TÉCNICO LISBOA´s academic eco-system.

DEI, as a collective of professors, students and academic staff, aims to maintain the dynamic balance of being institutionally solid, mature, and focused on the core CS&E competencies, while at the same time feeling and acting young while constantly seeking new, bold, untried and out-of the-box initiatives that carve out a future which surely will bring a lot of changes.

Further information can be found at the DEI website:
 https://fenix.tecnico.ulisboa.pt/departamentos/dei

3.
Activities of DEI

Developed in 2015-2016

Several main actions were implemented have been taken during the last biennium (2015-2016) to achieve the goals detailed in the Executive Commission program. This program included the nine main objectives detailed below:

1. Consolidation of the new LEIC curriculum and improve student s' success
- Consolidation of the monitoring platform of teaching activities
- Creation of a mechanism for monitoring student attendance
- Promotion of the usage of e-learning contents

2. Implementation of new curriculum for MEIC
- Creation of mechanisms to support student understanding of how to manage the new curriculum
- Improve MEIC visibility and attractivity to increase student recruitment at National and International levels

3. Re-evaluation of all DEI degrees and masters programs, namely the LETI, METI and MISE
- Bring all programs to the same level of excelence

4.Development of a new dynamics to improve the Department PhD programs in the diverse areas related to Computer Science and Engineering
- Definition of a sustainable grant program to support PhD students
- Initiation of the process of re-structuring of the curricular offers given by the PhD program
- Increased participation at the " IST PhD day" an event organized by CS students
- Increased participation in several national PhD programs in transversal areas (in particular the CMU-Portugal program and the NetSys program).

5. Increase the current level of quality of DEI services
- Increase training opportunities for non-teaching staff
- Start the implementation of a quality support system to support all DEI services
- Organisation of regular meetings with all staff

6. Improve the Department facilities
- Implementation of a global project to improve outdoor infrastructures, in cooperation with the Department of Mechanics
- Re-equipment of DEI labs and teaching rooms, social gathering spaces, meeting rooms with multimedia and videoconference support

- Creation of shared spaces for non-resident teachers, Master's thesis students and PhD students
- Improvement of the spaces for student activities (nuclei of students, study rooms, meals and chill out spaces)
- Requalification of the infrastructures managed by DEI restricted to urgent interventions for budgetary reasons.

7. Definition of task forces to engage all teaching staff in the Department's activities
- Support of teachers' initiatives involving important student activities such as Hackerschool, Programming contests, Information Security contest, CoderDojo, Codeweek
- Support of scientific areas initiatives to improve education, technology transfer and the connection to the society. For example, the implementation of a Games Laboratory
- Organization of an annual meeting to bring toguether all PhD students, the PhD DEI
- Organization of a Department wide strategic faculty meeting, D-DEI, to discuss medium and long term teaching and research initiatives

8. Increase the involvement of DEI in the University organisational system
- Scheduling of regular meetings with the Scientific Council board of TÉCNICO LISBOA
- Proposal of regular meetings with the Pedagogical Council of TÉCNICO LISBOA
- Scheduling of a semestral meetings with all course's student representatives
- Scheduling of mothly meetings with the Management Board of TÉCNICO LISBOA and with Heads of other TÉCNICO LISBOA departments

9. Development of effective entrepreneurship initiatives
- Inclusion of a course on entrepreneurship in MEIC
- Inclusion of a class on entrepreneurship in the introductory course IEI
- Organization of the cycle of conferences CIO@IST

Planned for 2017-2018

• Further improvement of our outreach activities with secondary schools
• Continuous improvement the Department's 1st and 2nd cycle degrees, and con-
  clude the ongoing reform of the 3rd cycle program (doctoral studies)
• Improve the web presence of the Department through a tighter integration with
  the information from our research units, and a strong focus on our success stories
• Create awards to recognize the quality work conducted by students, faculty, and
  staff.
• Maintain the cycle of conferences CIO@IST

Long-term activities

• Conduct outreach activities with other departments of the university, in order to
  make the availibility of computer science related courses more uniform across dif-
  ferent degrees
• Achieve better integration between the activities of the Department and those
  of the research units that are associated with it
• Develop the departmental capabilities for individual academic career guidance
  and support, encouraging its medium and long-term planning

4.
Education

The Department of Computer Science and Engineering (DEI) is currently offering the following bachelor degree programs (BSc), master degree programs (MSc) according to the Bologna Process, and PhD programs.

Bachelor degree progams:

Bologna Degree in Information Systems and Computer Engineering
(LEIC –Licenciatura em Engenharia Informática e de Computadores),
Alameda:
(https://fenix.tecnico.ulisboa.pt/cursos/leic-a)
Taguspark
(https://fenix.tecnico.ulisboa.pt/cursos/leic-t)

Bologna Degree in Telecommunications and Informatics Engineering
(LETI – Licenciatura Bolonha em Engenharia de Telecomunicações e Informática):
(https://fenix.tecnico.ulisboa.pt/cursos/lerc)
Jointly with the Department of Electrical and Computer Engineering (DEEC – Departamento de Engenharia Electrotécnica e de Computadores).

Master degree progams:

Bologna Master Degree in Information Systems and Computer Engineering at Alameda and Taguspark
(MEIC - Mestrado em Engenharia Informática e de Computadores):
at Alameda
(https://fenix.tecnico.ulisboa.pt/cursos/meic-a)
Taguspark
(https://fenix.tecnico.ulisboa.pt/cursos/meic-t)

Bologna Master Degree in Telecommunications and Informatics Engineering
(METI – Mestrado em Engenharia de Telecomunicações e Informática):
(https://fenix.tecnico.ulisboa.pt/cursos/merc)
Jointly with the Department of Electrical and Computer Engineering (DEEC – Departamento de Engenharia Electrotécnica e de Computadores).

Bologna Master Degree in Information and Enterprise Systems
(MISE – Mestrado em Informação e Sistemas Empresariais):
(https://fenix.tecnico.ulisboa.pt/cursos/mise)
Jointly with Universidade Aberta

Master's in Biomedical Engineering,
Jointly with the Department of Bioengineering

DEI also participates in the coordination of the following program:

Erasmus Mundus master's program in Distributed Computing

PHD programs:

PhD program in Information Systems and Computer Engineering (PDEI – Programa Doutoral em Engenharia Informática e de Computadores):
(https://fenix.tecnicoulisboa.pt/cursos/DEIC)

Joint doctoral program in Distributed Computing between IST and Ecole Polytechnique Fédérale de Lausanne (IE-JPDC - IST/EPFL)

Erasmus Mundus Joint doctorate in Distributed Computing

DEI also participates in the following programs:

Erasmus Mundus Joint doctorate in Distributed Computing

Joint doctoral program in Distributed Computing between IST and Ecole Polytechnique Fédérale de Lausanne (IE-JPDC - IST/EPFL)

Doctorate in Bioengineering (MIT-Portugal Program)
(http://www.mitportugal.org/bioengineering-systems/)

Doctoral program in the Physics and Mathematics of Information:
(http://www.dp-pmi.org/)

Doctoral FCT program "Robotics, Brain and Cognition" with EPFL:
(http://rbcog.isr.ist.utl.pt/index.htm)

Networked Interactive Cyber-Physical Systems (NETSyS),
Institute for Systems and Robotics - Lisbon (ISR Lisboa/IST/UTL)
In addition to the academic education above, DEI also offers professional training:

Advanced Formation Diploma in Information Systems (POSI–Pós-Graduação em Sistemas de Informação)
https://fenix.tecnico.ulisboa.pt/cursos/posi

Software and Information Systems Engineering (SISE–Software e Engenharia de Sistemas de Informação):
https://fenix.tecnico.ulisboa.pt/cursos/sise

The Department of Computer Science and Engineering participates in student exchanges through the Erasmus program as well as other exchange programs with various European and Latin American universities.

Program Description and Objectives

Bologna Degree in Information Systems and Computer Engineering (LEIC)
(Coordinators: Prof. Inês Lynce (Alameda), Prof. Nuno Mamede (Taguspark))

Computer Science and Engineering is an area with a vast impact on today's society as computers are everywhere: on our desks, in the form of tablets or mobile phones, embedded in pacemakers or insulin pumps, controlling lights or industrial systems, in automobiles or airplanes. The applications of this area range from organizations and their management to telecommunications, banking, insurance, health, education, justice, defense and all the way through to culture and entertainment.

LEIC is offered at both the Alameda and Taguspark campuses with identical curriculums, following the main recommendations of international professional associations such as ACM and IEEE.

The main objective of the LEIC is to provide students with a solid background in the field of computer science and engineering through a well-structured curriculum based on techniques and best practices promoted internationally.

Students have been improving their marks every year. The 2013 changes on the curriculum have been effective. Noteworthy is the performance of students admitted in September 2015 in its 1st semester: the goal of reaching 80% of approvals was exceeded.

Bologna Degree in Telecommunications and Informatics Engineering (LETI)
(Coordinator: Prof. Rui Valadas)

The Bachelor's degree in Telecommunications and Informatics Engineering aims at providing the scientific and technological fundamentals in the area of information technologies and communications networking. It is an answer to the increased demand of professionals capable of dealing with the different aspects of Internet Engineering.

The graduates of LETI are provided with a solid basis in a broad range of areas, including Informatics, Computers, Electronics, Security, Networks, and Telecommunications, thanks to innovative teaching methods and to the interaction with the surrounding technological environment, leveraged by their immersion in the environment of Taguspark, the largest Portuguese Science and Technology Park.

Upon completion of their degree, LETI students have direct access to the Bologna Master's degree in Telecommunications and Informatics Engineering (METI). Alternatively, LETI graduates can continue their studies at other national or international schools, or immediately be integrated into the specialized job market.

Bologna Master Degree in Information Systems and Computer Engineering - (MEIC)
(Coordinator: Prof. Miguel Correia)

The experts holding an MSc degree in Computer Science and Engineering obtained at IST will be able to analyse, develop and implement complex information systems, in distributed and heterogeneous environments, in permanent technological change, which characterize the current information-based society.

Through the training acquired in this program, students will also be able to confidently develop their activity in the most areas of computer science and engineering, ranging from the conception of information systems for all types of organizations to the implementation of complex distributed systems based on internet technologies.

The MSc degree in Computer Science and Engineering accepts not only applicants with a bachelor's degree in Informatics from IST, but also students with bachelor's degrees obtained in other higher education institutions who are interested in complementing their studies at IST.

MEIC offers 15 attractive specializations both for the students and the market, also serving as a strong basis for students aiming to engage in doctoral programs.

Bologna Master Degree in Telecommunications and Informatics Engineering (METI)
(Coordinator: Prof. Paulo Ferreira)

The master's program in Telecommunications and Informatics (previously called master's in Communications Networks Engineering, MERC) combines telecommunications and computer science engineering. In addition to a solid theoretical approach, the experimental component is of fundamental relevance, in line with the long and well-established tradition at IST of emphasising "learning by doing".

The master's program in Telecommunications and Informatics (METI) is aimed at graduating professionals in the area of information and communication technologies, who should be able to effectively address the new challenges that emerge from the convergence of information technologies and telecommunications. The holders of a METI will have fundamental knowledge in these two engineering fields thanks to the use of innovative teaching methods and to the interaction with the surrounding technological milieu, promoted by Taguspark, the largest Portuguese science and technology park. Therefore, METI engineers are particularly skilled to deal with complex (fixed or mobile) communications networks in the context of communications infrastructures, service development and/or applications.

The area of telecommunications and informatics provides students with a large number of job opportunities. Thus, 100% of METI students find a job adequate to their skills as soon as they complete the degree.

Bologna Master Degree in Information and Enterprise Systems (MISE)
(Coordinator: Prof. Miguel Mira da Silva)

The online master's degree in Information and Enterprise Systems is offered jointly by Instituto Superior Técnico and Universidade Aberta. The 1st edition (hosted by UAb) was launched in 2013 with 60 numerus clausus, and last year for the 3rd edition (hosted by IST) we received 100 applications.

Although most studies confirm that students enrolled in online master degrees have a lower success rate and take twice as long to finish the degree, seven students already submitted their theses less than three years after the 1st edition started. We expect to double the number of theses to be submitted next year by students from the 2nd edition. And currently we have 45 students actively enrolled in the 3rd edition.

The main activities as coordinator have been to monitor the students, courses, and lecturers, detecting and solving issues and problems, and overall making sure that nobody is distracted from the teaching and learning activities. We also organize meetings with the MISE Scientific Council and other stakeholders, as well as online events (recorded in video) and social dinners with the students.

Every year in July we also organize a five days meeting in Montijo (first two years) or Setúbal (this year) attended by most students. The main goal of this meeting is to find and close topics for the theses, although we also have many social activities, guest speakers (from IT companies, IT customers and IT recruiters) and presentations by lecturers and students. This year we will invite some students to present their master theses.

After the week in July, we intend to repeat the huge success from last year and recruit again 100 candidates to the 60 slots available for the 4rd edition starting in September.

Master's Degree in Biomedical Engineering
(Representative from DEI: Prof. Mário Gaspar da Silva)

The participation of the Department of Computer Science and Engineering in the master's in Biomedical Informatics was recently increased, with the new re-organization of this degree starting in the 2013/2014 academic year. The new specialisation in Clinical Engineering, jointly offered with the Department of Engineering Management, is gaining traction and has now one of the highest number enrolled students. The specialization curriculum includes two courses from the Department: Information Systems and Databases, previously offered as an elective course to 2nd cycle degrees, and the Health Informatics course, jointly offered to Computer Science and Engineering (MEIC) and Telecommunications and Computer Science (METI). Both courses are mandatory in the Clinical Engineering specialization. The results of quality assessment through student questionnaires (QUC) show that both courses were perceived very favourably by the students.

Since information technology has a mounting prevalence in biomedical engineering, it is expected that, over time, the students will have a rising interest in other relevant optional courses offered by the Department of Computer Science and Engineering.

Erasmus Mundus Master's Program in Distributed Computing
(Coordinators at IST: Prof. Luís Rodrigues and Prof. Luís Veiga)

The European Master's in Distributed Computing is an international master's program sponsored by the EU under the Erasmus Mundus program. The program is run by a consortia that includes KTH/Sweden (the coordinator), IST and UPC/Spain. Half of the students do the first two semesters of the pro- gram at IST and another half do the rst two semesters at UPC. Then, all students do the third semester at KTH. Finally, students do their MSc thesis in one of the three institutions. At IST, the program is structured as part of MEIC. The first group of students enrolled in 2010-2011 and the last group enrolled in 2014-2015. Currently there are no plans to continue the program after 2016. On average, the program brought seven students per year to IST, for a total of 34 international students during the lifetime of the program. Half of these students did (or will do) their MSc theses under the supervision of IST professors.

PhD program in Information Systems and Computer Engineering (PDEI)
(Coordinator: Prof. Ana Paiva)

The PhD Program in Computer Science and Engineering (PDEI) aims at deepening the knowledge of graduates in various areas of Computer Science and Engineering, including computer architectures and operating systems, artificial intelligence, computer graphics and multimedia, information systems, software engineering and programming methodologies.

The curriculum is composed by a curricular component and a research component. During their first year, the candidates must enroll in five thematic courses (the first of which provides an introduction to research); the thematic courses aim at complementing the background of the candidates in topics relevant to their research plan. Along this first year, candidates should also work on a detailed thesis proposal, to be defended at the end of that year. From the second year onwards, students will engage in research activities that can be carried out in collaboration with any research group or hosted in a business environment, within the country or abroad, in order to enhance the work's internationalization.

Graduates from this program are highly qualified and able to work autonomously, conduct research, develop new products and create start-ups, in either academic or business environments. To this end, during the program, the candidates will have the opportunity to:
- Contribute with a significant body of work of original research to extending the frontiers of knowledge, some of which will merit publication in peer-reviewed conferences or journals;
- Improve the ability to understand in a systematic way a given scientific field of study;
- Obtain skills, abilities and research methods associated with a scientific field;
- Train the ability to design, deploy, adapt and implement a significant body of research to high standards of both quality and academic integrity;
- Train the ability to critically analyze, evaluate and synthesize complex new ideas;
- Learn to communicate with their peers, the academic community and society at large on the topics they specialized in;

During the first year, the candidates must enroll in five thematic courses (the first of which provides an introduction to research); the thematic courses aim at complementing the background of the candidates in topics relevant to their research plan. During the first year, the candidates should also work on a detailed thesis proposal, to be defended at the end of that year. In the following two years the candidates are expected to conduct research work that will culminate with the writing and public defense of their PhD theses.

The candidates will be advised by faculty from the DEI at IST and, depending on their topic of study, by other professors with complementary expertise from other IST departments or universities. Most professors are integrated in research laboratories, such as INESC-ID that provide the facilities required for the candidate to pursue his or her research plan, as well as exciting opportunities for the candidate to be integrated in national and international research projects. As part of their study plan, candidates are encouraged to spend some periods abroad in other universities, research labs or companies. Candidates interested in using their research outcomes to create start-ups will be supported by the IST and the associated research labs in this endeavour. The PhD program in Computer Science and Engineering is an umbrella for several international partnerships and, depending on their topic of study, students may enroll in dual degrees with foreign universities including CMU (USA), EPFL (Switzerland), KTH (Sweden), UCL (Belgium), University of Lyon (France), UPC (Spain), and University of Rome (Italy).

Alumni of the PhD program in Computer Science and Engineering are placed in universities, research labs, start-ups and established companies all over the world such as: Amazon, Calgary University, CRP Henri Tudor, DefineScope, Deloitte Portugal, Fujitsu Laboratories of Europe Limited, Google, ISCTE, ISEL, Kayak Berlin, Maksen, Microsoft Portugal, Microsoft Research Cambridge, OpenSoft, Oxford University, Sapo, Social Robotics Labs of Yale University, TU Delft, Unbabel, Universidade Aberta, Universidade do Algarve, Universidade de Lisboa, Universidade Nova de Lisboa, Virginia Tech, among others.

Erasmus Mundus Joint Doctorate in Distributed Computing
(Coordinators at IST: Prof. Luís Rodrigues and Prof. Luís Veiga)

The Erasmus Mundus Joint Doctorate in Distributed Computing is an international PhD program sponsored by the EU under the Erasmus Mundus program. The program is run by a consortia that includes UPC/Spain (the coordinator), KTH/Sweden, UCL/Belgium and IST. The students have a mobility plan that includes at least two institutions from the consortia. At IST, the program is structured as part of PDEI. The first group of students enrolled in 2012-2013. Up to now, there have been 12 PhD students that have selected IST as part of their mobility plans (either as first institution or second institution).

IE-JPDC - IST/EPFL Joint Doctoral Program in Distributed Computing
(Coordinators at IST: Prof. Miguel Correia, Prof. Luís Rodrigues and Prof. Luís Veiga)

The Department responded to the call for international PhD programs by FCT (Fundação para a Ciência e a Tecnologia) and a proposal for an international PhD program in Distributed Computing in cooperation with EPFL has been approved.

Advanced Formation Diploma in Information Systems (POSI)
(Coordinator: Prof. José Tribolet)

POSI-E3, IST's postgraduate program in Enterprise Information Systems and Enterprise Engineering, primarily aims to develop new competence in organizations' higher executives to deal with complex problems and decisions inherent to the management and operation of organizations in this second decade of XXI century.

The tremendous variability in the external environment and internal operation of organizations requires dynamic alignment between enterprise information systems and business processes, whose management and control involves new theoretical knowledge, new methods and new action techniques built on solid systems engineering perspectives and, consequently, the emergence of a new engineering area, currently designated as enterprise engineering.

Besides maintaining, at the heart of its concerns, the focus on enterprise information systems and their alignment with business processes, the POSI-E3 course focuses the learning of its students on the emerging areas of design, governance, control and dynamic adaptation of enterprise transformations, and on transactional responsibilities of and within organizations.

Software and Information Systems Engineering (SISE)
(Coordinators: Prof. José Tribolet and Prof. Miguel Mira da Silva)

The postgraduate program in Software and Information Systems Engineering (SISE) was designed to prepare top Ms. Sc. engineering graduates, in any field except Computer Science and Engineering, for careers requiring technical capabilities in software and information systems immediately after the program completion.

Técnico offers two programs per year, with up to 40 students per course. The first four itterations, offered in a regime intensive format, were fully sponsored by a top international consulting company.

The first, in the first semester of 2015/16, was a huge success, with the 40 enrolled students who completed successfully the program 6 months later. These first 40 graduates have all accepted a job in the sponsoring consulting company, and are now working in the field, in Portugal and abroad.

The second edition, in the second semester of 2015/16 admitted 35 students with 34 having completed successfully the 6 month program, also later joining the sponsoring consulting company.
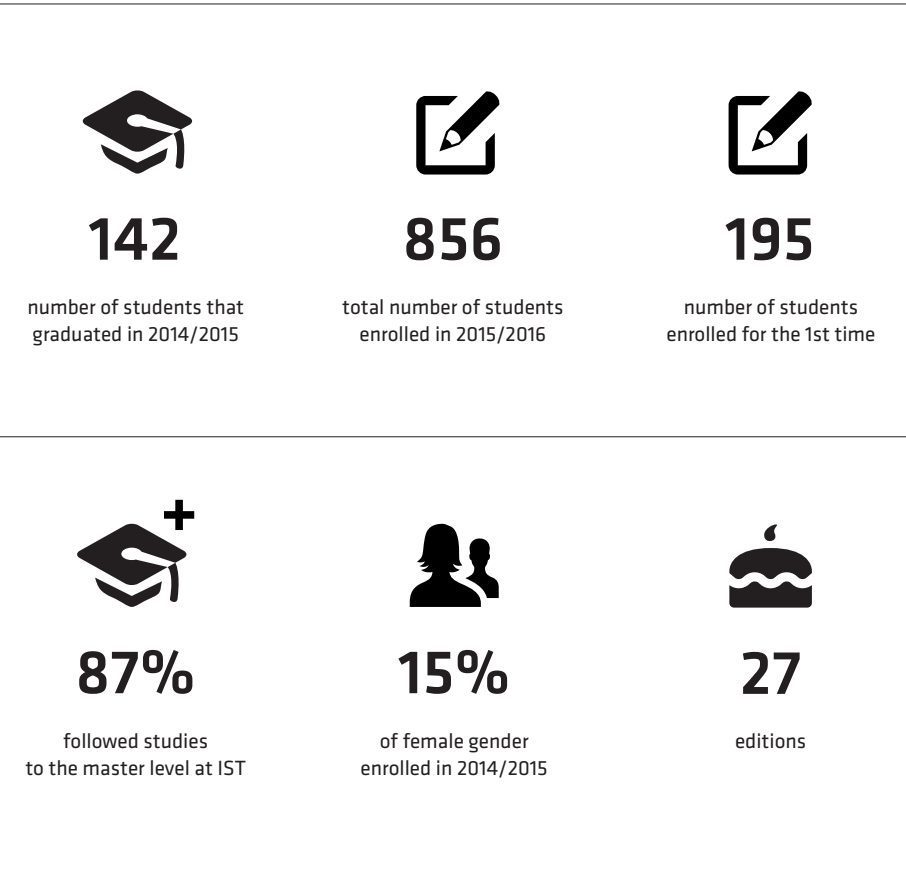
The third edition, running during the first semester of 2016/17 has admitted 35 students.

Bologna Degree in Information Systems and Computer Engineering (LEIC)
Coordinator: Prof. Inês Lynce (Alameda)

I have the honour and pleasure of being the coordinator of LEIC-A where I was formerly a student in one of its first editions. LEIC is definitely a landmark in the Portuguese education system, providing the most qualified computer engineers nationwide and worldwide. On completion of the course students become excellent programmers, being able to analyse a problem and provide the most appropriate solution.

142

number of students that
graduated in 2014/2015

856

total number of students
enrolled in 2015/2016

195

number of students
enrolled for the 1st time

87%

followed studies
to the master level at IST

15%

of female gender
enrolled in 2014/2015

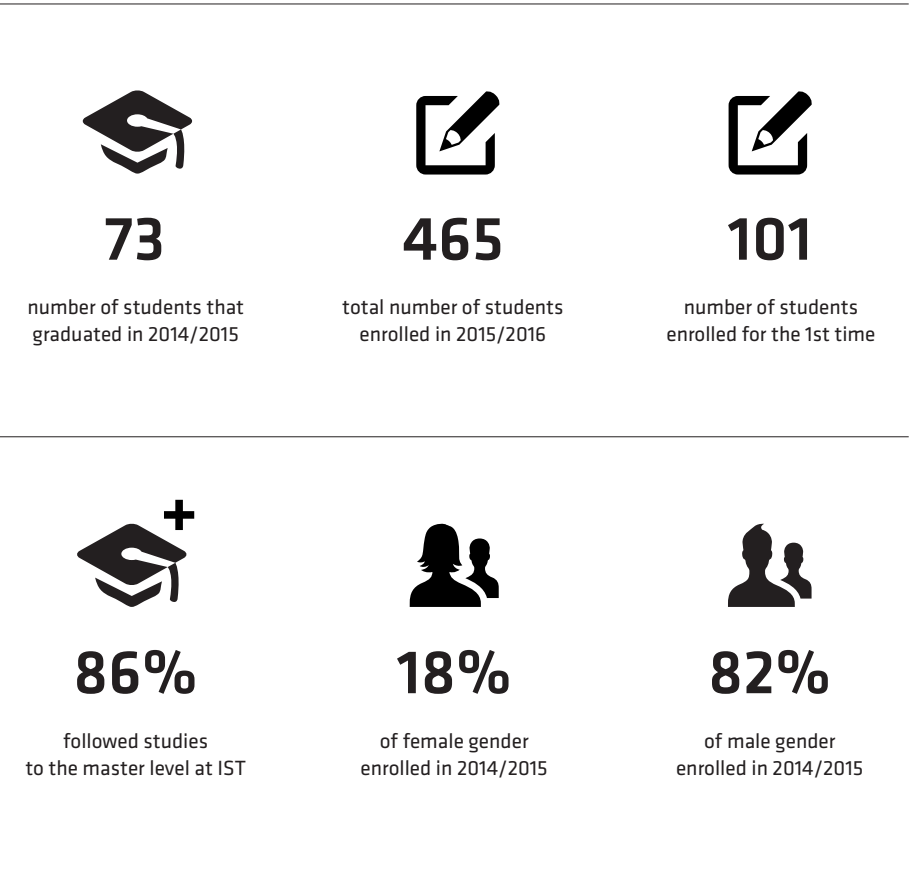**27**

editions

DÉBORA RODRIGUES / TÉCNICO

Bologna Degree in Information Systems and Computer Engineering (LEIC)
Coordinator: Prof. Nuno Mamede (Tagus)

LEIC in Taguspark combines the IST quality with the campus outstanding facilities, promoting a healthy comraderie between students and a close relationship with teachers. Another important advantage is the interaction with the surrounding technological milieu offered by Taguspark, the largest science and Technology Park in Por- tugal. Those choosing to study Computer Science in Taguspark will never regret their decision and will always remember the warm welcome they got from all the staff and fellow students.

73

number of students that
graduated in 2014/2015

465

total number of students
enrolled in 2015/2016

101

number of students
enrolled for the 1st time

86%

followed studies
to the master level at IST

18%

of female gender
enrolled in 2014/2015

82%

of male gender
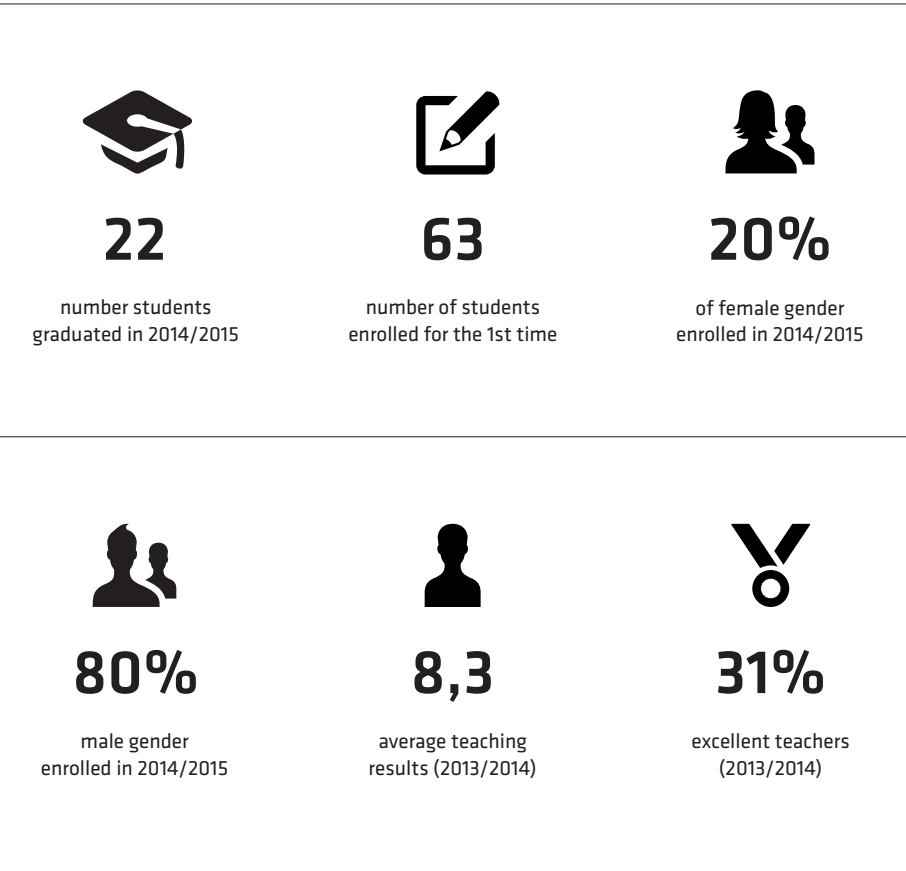enrolled in 2014/2015

DÉBORA RODRIGUES / TÉCNICO

Bologna Degree in Telecommunications and Informatics Engineering (LETI)
Coordinator: Prof. Rui Valadas

LETI provides solid and broad skills in all areas related to Internet Engineering, from the network infrastructure that supports the Internet to its distributed applications and services. LETI engineers are highly valued worldwide. Former students are all employed and enjoying their work, some in companies like Google, Facebook, and Amazon, and the degree gave rise to many technological startups. The area of LETI will keep growing for many years, and will keep providing a green field for creative minds that want to contribute to the design of the future Internet. Come and join us!
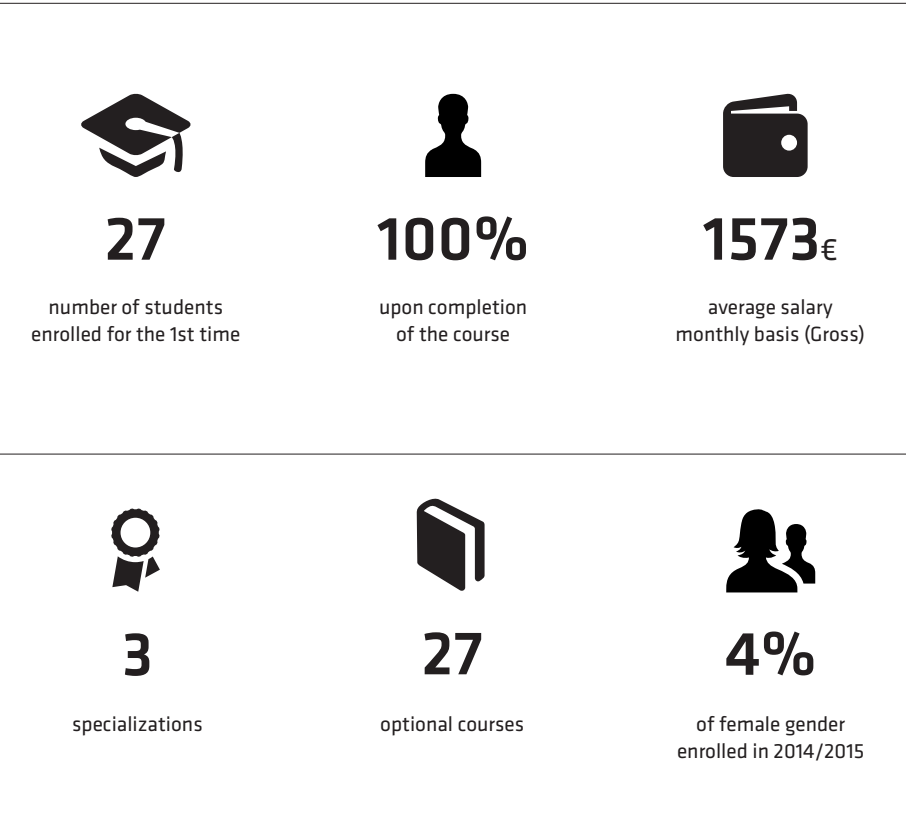
22

number students
graduated in 2014/2015

63

number of students
enrolled for the 1st time

20%

of female gender
enrolled in 2014/2015

80%

male gender
enrolled in 2014/2015

8,3

average teaching
results (2013/2014)

31%

excellent teachers
(2013/2014)

Bologna Master´s Degree in Telecommunications and Informatics Engineering (METI)
Coordinator: Prof. Paulo Ferreira

The Masters in Telecommunications and Informatics (METI) is aimed at graduating professionals in the area of Information and Communication Technologies, able to effectively address the challenges emerging from the convergence of Information Technologies and Telecommunications. These skills are widely recognized by the high employability of METI engineers and the number and quality of startups created.

27

number of students
enrolled for the 1st time

100%

upon completion
of the course

1573 €

average salary
monthly basis (Gross)

3

specializations

27

optional courses

4%

of female gender
enrolled in 2014/2015

Bologna Master Degree in Information Systems and Computer Engineering (MEIC)
Coordinator: Prof. Miguel Correia

September 2015 marked the beginning of a renewed MEIC! After a 2-year period of preparation, the two previous programs – MEIC-A and MEIC-T – reappeared as a single program, with greater flexibility for the students, and new and exciting specialization domains in areas such as cyber-security, big data, and bioinformatics. With 100% employment and entry salaries above 2000 euros, MEIC is an excellent option for those interested in Computer Science and Engineering.

146

graduates in
last academic year (2014/15)

79,3%

employability
before finishing the course

100%

employability within
6 months after graduation

1600€

average salary
monthly basis (Gross)

15

specializations

60

elective courses

Bologna Master´s Degree in Information and Enterprise Systems (MISE)
Coordinator: Prof. Miguel Mira da Silva

The 1st edition of the online master's degree in Information and Enterprise Systems (MISE) was launched in 2013. Although students in online degrees usually take twice as much time to graduate and have higher dropout rates, 8 students have already sub- mitted their master thesis. In 2015 we received 100 applications and accepted 60 students, and now 40 students have already finished the first academic year.
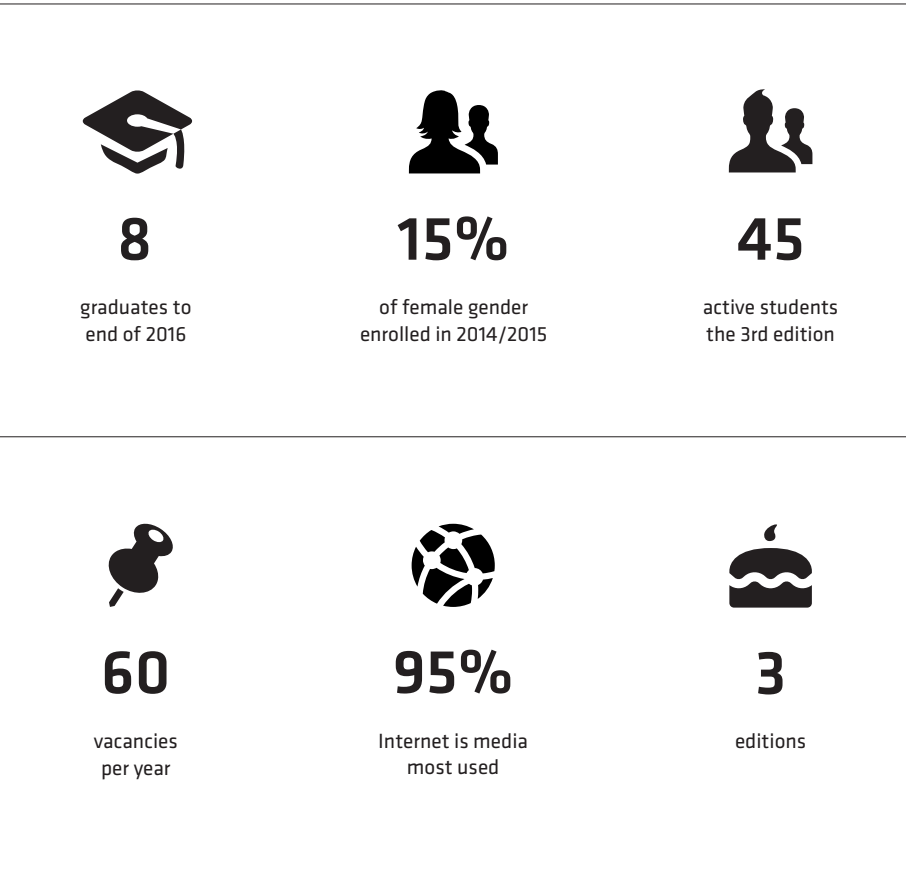
8

graduates to
end of 2016

15%

of female gender
enrolled in 2014/2015

45

active students
the 3rd edition

60

vacancies
per year

95%

Internet is media
most used

3

editions

DÉBORA RODRIGUES / TÉCNICO

PhD program in Information Systems and Computer Engineering (PDEI)
Coordinator: Prof. Ana Paiva

The PhD Program in Computer Science and Engineering (PDEI) complements the basic training in Computer Science and Systems and opens doors to innovation and creativity in computer science. It is a pleasure to be coordinator of this program and see young graduates start their PhD program and after four years become recognized worldwide as first class researchers or entrepreneurs.

36

new students
em 2015/2016

20%

foreign students

30

students discuss
thesis in 2015 and 2016

110

number of scientific
articles published in 2015

8

number of
awards in 2015

10

editions

Erasmus Mundus Master's Program in Distributed Computing
Coordinators at IST: Prof. Luís Rodrigues and Prof. Luís Veiga

The EMDC is the result of a cooperation among KTH in Sweden, IST, and UPC in Spain. The program, that ran from 2010 to 2016, offered a two-year MSc degree providing a solid foundation for understanding, designing, implementing, and managing scalable and reliable distributed systems. The program attracted to IST 35 international students, from 19 different countries.

Argentina	India	Romania	Sweden
Brazil	Kenia	Russia	Turkmenistan
China	Lithuania	Serbia	Turkey
Spain	Macedonia	Slovakia	Vietnam
Hungary	Pakistan	Sri Lanka	

Erasmus Mundus Joint Doctorate in Distributed Computing
Coordinators at IST: Prof. Luís Rodrigues and Prof. Luís Veiga

The EMJD-DC is an international PhD programme offered by UPC (Spain), UCL (Belgium), IST, and KTH (Sweden). Students carry out their research work covering the exciting field of Distributed Systems in two partner universities and regularly participate in joint training schools cover both scientific topics and transferable skills. The program attracted to IST 15 international PhD students, from 13 different countries.

Bosnia and Herzegovina	Ethiopia	Kenia	Venezuela
China	Greece	Macedonia	
Spain	Iran	Pakistan	
Egypt	Italy	Sri Lanka	

5.
Research Activities

Scientific Areas

The Department of Computer Science and Engineering has five scientific areas in which the professors develop their scientific competences. The (BSc, MSc, PhD) programs offered by DEI also involve the same five scientific areas:

DEI

- Architecture and Operating Systems
- Artificial Intelligence
- Programming Methodology and Technology
- Information Systems
- Computer Graphics and multimedia
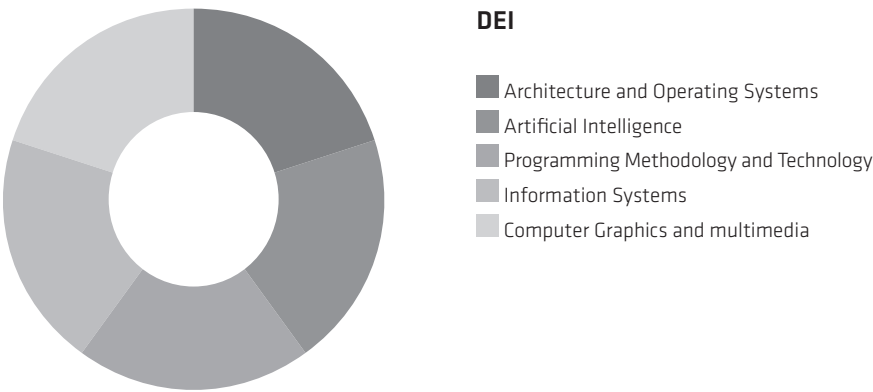
Architecture and Operating Systems
(Scientific Coordination: Prof. Luís Rodrigues)

DEI's scientific area of Architecture and Operating Systems (ASO – Arquiteturas e Sistemas Operativos) focuses its research and teaching activity on the infra-structural aspects of computing systems, i.e. all domains between hardware architectures and the application levels of computer science.

The area has circa 20 faculty members, whose work addresses the following topics: hardware architectures, parallel processing, embedded systems, architectural support for multimedia and security, operating systems, computer networks, computer security, fault-tolerance, distributed systems, mobile computing, cloud computing, middleware, and enterprise integration. The ASO area is present at both IST campuses, Alameda and Taguspark, as well as at INESC-ID Lisboa.

Computer Graphics and Multimedia
(Scientific Coordination: Prof. Joaquim Jorge)

The motto of the scientific area of Computer Graphics and Multimedia (CGM – Computação Gráfica e Multimédia) is "Putting People First". Professors in this area have two main research interests: Visualization and Interaction. The former studies Advanced Computer Graphics Techniques, Animation, Scientific visualization and Information Visualization. The latter researches human-computer interaction with an emphasis on user-centred design and accessibility. The courses offered in the area reflect these interests. At the undergraduate level, we offer two introductory courses: Interactive Computer Graphics and Human-Computer Interaction. At the MSc level, the area offers advanced courses on more specific subjects, including a specialization in Games and Visualization and Interaction, featuring Courses on Advanced Graphical Visualization, Computer Animation, Visual Computing and Multimedia Content Production.

Artificial Intelligence
(Scientific Coordination: Prof. João Pavão Martins)

The field of Artificial Intelligence (IA – Inteligência Artificial) aims at creating algorithms and systems that exhibit intelligent behaviour. The Scientific area of Artificial Intelligence of DEI integrates a set of professors teaching and researching most of the main topics in this area. There are two undergraduate courses, addressing Introduction to Artificial Intelligence and Logic and Reasoning; at the Master's level DEI offers courses in Natural Language, Search and Planning, Decision-Support Systems, Autonomous Agents and Multi-Agent Systems, Learning, and Knowledge Representation and Reasoning. Research interests of DEI's faculty include autonomous agents and multi-agent systems, machine learning, quantum artificial intelligence, natural language processing, search, knowledge representation and reasoning, and intelligent robotics.

Programming Methodology and Technology
(Scientific Coordination: Prof. Ana Teresa Freitas)

The Scientific area of Programming Methodology and Technology (MTP – Metodologia e Tecnologia de Programação) at DEI encompasses research and teaching in different topics of computer science and engineering, including algorithms, computational complexity, software engineering, and programming languages. Specific research topics include bioinformatics and computational biology, software verification and validation, parallel and concurrent programming, constraint programming, social software, security and natural language processing, amongst others.

Information Systems
*(Scientific Coordination: Prof. Mário Gaspar da Silva)*

Information Systems (SI – Sistemas de Informação) at DEI has two main scientific and pedagogical objectives: (i) teaching/researching the fundamentals for dealing with companies as organisations, considered as complex systems encompassing information systems; and (ii) teaching/researching the fundamentals for creating and operating computer systems where the complexity of the information and processes is high, either due to the amount of data to process and interpret, or the size of the organisations and communities who use them. To achieve such goals, the development of research and innovation activities in this domain requires specialised practice and expertise in information systems engineering

Research and Techonology Transference and Development

A large fraction of the DEI faculty is actively involved in research and is affiliated with a research laboratory partially funded by the "Fundação para a Ciência e a Tecnologia" (FCT), the national funding agency for science, technology and innovation:
• Laboratories of INESC-ID (www.inesc-id.pt)
• Laboratories of Instituto de Telecomunicações (IT) (www.it.pt)
• Laboratories of Instituto de Sistemas e Robótica (ISR)
  (www.isr.tecnico.ulisboa.pt)

The distribution of faculty among the several research units associated with IST is the following:

Research Units

■ INESC-ID
■ IT
■ ISR
■ Not affiliated with any research lab
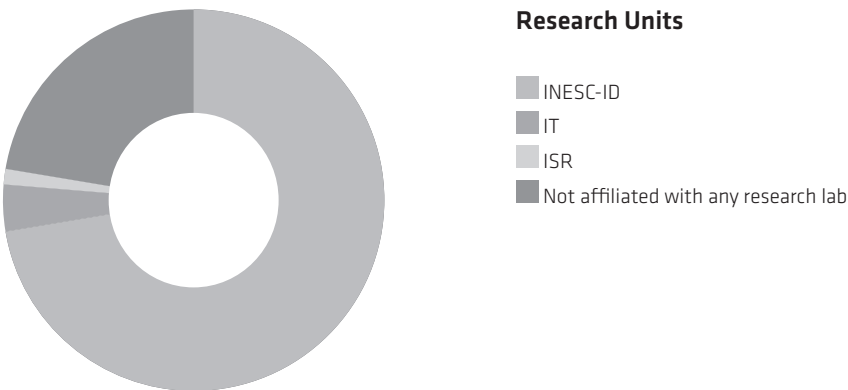
Furthermore, faculty members working in a given research unit are organized in research groups that cover specific areas. The distribution of the faculty members among research groups is as follows:

Research GROUPS

■ Algorithms for optimization and simulation
■ Artificial Intelligence
■ Communication Networks and Mobility
■ Distributed Systems
■ Information and Decision Support Systems
■ Intelligent Agents and Synthetic Characters
■ Security and Quantum Information
■ Signal and Image Processing
■ Signal Processing Systems
■ Software Engineering
■ Spoken Language Systems
■ SW Algorithms and Tools for Constraint Solving
■ Visualizations and Intelligent Multimodal
  Interfaces

6.
Seminar and Lectures

We thank all the speakers for the generosity of their time and for their challenging and exciting presentations.

INESC-ID Seminar Series

January 8, 2015
Reading News with Maps by Exploiting Spatial Synonyms
Hanan Samet (University of Maryland)

February 12, 2015
Collaborative Mobile Charging and Coverage in Wireless Sensor Networks
Jie Wu (Temple University)

February 20, 2015
Non-cooperative and Deceptive Dialogue
David Traum (ICT- University of Southern California, USC)

March 4, 2015
Rethinking reverse converter design: From algorithms to hardware components
Amir Sabbagh Molahosseini (Islamic Azad University)

March 13, 2015
Lasp: a language for eventually consistent distributed programming with CRDTs
Peter Van Roy (Université catholique de Louvain)
Christopher Meiklejohn (Basho Technologies)

March 27, 2015
The University of the Future: Taking Knowledge Out of Campus, A Personal Tale

Nivio Ziviani (Universidade Federal de Minas Gerais)

April 1, 2015
Computing in Space with OpenSPL
Georgi Gaydadjiev (Chalmers University)

May 27, 2015
Hardware Security: Challenges, Solutions and Opportunities
*Chip Hong Chang
(Nanyang Technological University)*

June 3, 2015
Trends in Software Automatic Tests
Speaker from Wintrust

June 4, 2015
Optimized Algorithms and Dedicated Hardware for Video Coding
Marcelo Porto (Universidade Federal de Pelotas - UFPel, Brasil)
Luciano Agostini (Universidade Federal de Pelotas - UFPel, Brasil)

July 20, 2015
Temporal Information Retrieval – Understanding Time Sensitive Queries
Ricardo Campos (Instituto Politécnico de Tomar)

July 23, 2015
Lattice-based crypto: parallelization of sieving algorithms on multicore CPUs
Artur Mariano (Universität Darmstadt)

September 11, 2015
Predictive and Scalable
MacroMolecular Modeling
*Chandrajit Bajaj (University of Texas at
Austin)*

November 5, 2015
Ramon Llull: From the Ars
Magna to Agreement Computing
Carles Sierra (IIIA-CSIC)

November 23, 2015
Operation and Design of VHF Self-
Oscillating DC-DC Converter with
Integrated Transformer
Igor M. Filanovsky (University of Alberta)

December 3, 2015
Advanced Brain Imaging Techniques
Symposium (under the research project
Project HiFI - MRI on Advanced Brain
Imaging Techniques)
Lawrence Wald (Massachusetts General
Hospital, A. Martinos Center, Harvard
Medical School, Harvard-MIT HST)
Noam Shemesh (Champalimaud
Foundation)
*Patrícia Figueiredo (Institute for
Systems and Robotics)*
*Marta Bianciardi (Massachusetts General
Hospital, A. Martinos Center)*
*Tiago Maia (School of Medicine,
Universidade de Lisboa)*
*Mário Figueiredo (Telecommunications
Institute)*
December 22, 2015
The promise and peril of
anthropomorphizing agents
*Jonathan Gratch (ICT- University of
Southern California, USC))*

January 11, 2016
Gamification in your Classroom:
Avoiding stale water in fancy juice boxes
Lennart Nacke (University of Waterloo)

January 29, 2016
NetKAT: A Formal System For The
Verification Of Networks
*Alexandra Silva (University College of
London)*

February 26, 2016
Chain-of-trust packet marking
*Otávio Carpinteiro (Universidade Federal
de Itajubá, Brasil)*

March 10, 2016
System and Toolchain Support for
Reliable Intermittent Computing
*Brandon Lucia (Carnegie Mellon
University)*

March 17, 2016
Harnessing Virtualization Technology for
Intrusion Detection and Analysis
Hans P. Reiser (University of Passau)

March 31, 2016
Reconfigurable Computing:
Architectures, Compilers, Applications
*Markus Weinhardt (University of
Karlsruhe)*

March 31, 2016
Distributed Estimation and Prediction
of Radiation for Solar Energy Plants
(CODISOL)
Francisco R. Rubio (University of Sevilla)

April 27, 2016
Generating Textual Summaries at
Different Target Reading Levels:
Summarizing Line Graphs for Visually
Impaired Users
Kathy McCoy (University of Delaware)

April 28, 2016
Middleboxes as a cloud service
Justine Sherry (UC Berkeley)

May 3, 2016
Audio research for movies
Nuno Fonseca (INESC-ID)

May 18, 2016
Maximizing Parallelism without
Exploding Deadlines in a Mixed Criticality
Embedded System
Prof. Gilles Muller (LIP6)

May 27, 2016
Taking AR to Task: Explaining Where
and How in the Real World
Steve Feiner (Columbia University)

June 17, 2016
Estocada: Flexible Hybrid Stores
Ioana Manolescu-Goujot (INRIA Saclay)

June 22, 2016
Design and Development of
Microcontroller ZR16 - A Successful Case
*João Baptista Martins (Universidade
Federal de Santa Maria)*

June 22, 2016
Some recent work on Convolutional
Neural Networks (CNNs) for text
classification
*Byron Wallace (University of Texas at
Austin - UTA)*

June 22, 2016
In search of the role's footprints in
client-therapist dialogues: Analyzing
speech prosody from a sociolinguistic
perspective
*Silber-Varod (The Open University of
Israel)*

June 27, 2016
Efficient Power and Wideband Data
Transmission in Near Field
Maysam Ghovanloo (Georgia Tech)

June 28, 2016
Optimal Computation of Avoided Words
Solon Pissis (Kings College London)

June 28, 2016
Popping Superbubbles and identifying
clumps
Ritu Kundu (Kings College London)

June 29, 2016
Haplotype Assembly
Nadia Pisanti (University of Pisa)

July 1, 2016
The Unicage method for (big) data
processing and MONO-gramming for IoT
- from Japan to the World.
Hiroyuki Ohno (Kanazawa University,
Japan)

INESC-ID Distinguished Lecture Series

January 22, 2015
Privacy-Preserving Event Stream
Processing in the Cloud
Pascal Felber (Université de Neuchâtel)

June 4, 2015
More is different: how complex
networks lead to new emergent social
behavior
*Jorge M. Pacheco (Universidade do
Minho)*

September 28, 2015
Next-generation data-parallel dataflow
systems
Frank McSherry (ETH Zurich)

December 9, 2015
Evolving Critical Systems
*Mike Hinchey (Lero - the Irish Software
Research Centre)*

April 6, 2016
Tardis: Time Traveling Coherence
Algorithm for Distributed Shared
Memory

June 27, 2016
The Five Tribes of Machine Learning, and
What You Can Take from Each
*Pedro Domingos (University of
Washington)*

CIO@IST

CIO@IST is an initiative for promoting the contact of the students and faculty with professional usage of IT in representative companies in Portugal.

The objective is to have the Chief Information Officers (CIO) of the largest companies explaining the challenge to their companies in terms of IT and trying simultaneously to highlight the challenges for IT in different industry sectors. The initiative is coordinated with the Department courses addressing the social and professional issues of the IT profession.

The initiative consists of invited speakers that are recorded and a site was developed to register the full slide presentations, videos of the talk and Q&A.

The initiative consists in invited talks that are recorded and a site was developed to register the full slide presentations, videos of the talk and Q&A.

Each speaker is asked to provide his or her vision on the following topics:
• The role and relevance of information technologies in the business area and in the invited company;
• The architecture of the company's IT systems;
• Current Enterprise Architecture (as is);;
• Medium/short term transformation plan;
• Future challenges;
• Perspectives on the use/impact of information technologies in the business sector in the long term (10 years);
• Main innovative challenges: business, technological, social;
• Challenges and recommendations for computer science and engineering curricula, given current and future challenges.

So far there have been four presentations with from CIOs of Banco BPI (Banking), Galp (Oil & Gas), REN (Energy) and Fidelidade (Insurance).

More information at: http://cio.tecnico.ulisboa.pt

7.
Doctoral Theses

In 2015 and 2016, 24 doctoral theses were successfully defended in the following 3rd cycle (Ph.D.) courses offered by DEI:
- Ph.D. Program in Computer Science and Engineering (DEIC). More information at https://fenix.tecnico.ulisboa.pt/cursos/deic
- Dual Degree Ph.D. Program in Computer Science, in a collaboration between Instituto Superior Técnico (IST) and the School of Computer Science at Carnegie Mellon University (CMU). More information at http://ai.tecnico.ulisboa.pt/en/programas-de-estudo/programas-duplos-graus/cmu-portugal/
- Erasmus Mundus Joint Doctorate in Distributed Computing. More information at http://emjd-dc.eu/

We extend our congratulations to all the students and wish them the best in their future careers. Many of these theses were supervised or co-supervised by DEI members. We also extend our most sincere appreciation to all the colleagues from other departments who participated in the supervision of many of these theses.
In the listings below, theses are ordered by student surname.

Ph.D. Program in Computer Science and Engineering (DEIC)

Student Name: Ivo Filipe Silva Daniel Anjo
Title: Speculative Parallelization of Object-Oriented Applications
Supervisor: Professor João Manuel Pinheiro Cachopo

Student Name: Gonçalo José Branquinho Antunes
Title: Analysis of Enterprise Architecture Models: An Application of Ontologies to the Enterprise Architecture Domain
Supervisor: Professor José Luís Brinquete Borbinha
Co-Supervisor: Professor Artur Miguel Pereira Alves Caetano

Student Name: Gabriel José Faustino Fonseca Barata
Title: Differentiating Students in Gamified College Education
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Fernando Luís Todo-Bom Ferreira da Costa
Title: SCOLARS: SCalable LARge Scale Volunteer Computing for Map-Reduce
Supervisor: Professor Paulo Jorge Pires Ferreira

Student Name: Vasco Alexandre da Silva Costa
Title: Grid-Based Acceleration Techniques for Real-Time Ray Tracing
Supervisor: Professor João António Madeiras Pereira
Co-Supervisor: Professor Joaquim Armando Pires Jorge

Student Name: Maria Isabel Catarino Couceiro
Title: Autonomic Replicated Software Transactional Memory
Supervisor: Professor Luís Eduardo Teixeira Rodrigues
Co-Supervisor: Professor Paolo Romano

Student Name: Diego Didona
Title: Gray Box Performance Modeling of In-Memory Distributed Transactional Platforms
Supervisor: Professor Paolo Romano

Student Name: Sandra Pereira Gama
Title: Visualizing Personal Trends in Social Personal Information
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: João Pedro Vieira Guerreiro
Title: Enhancing Blind People's Information Scanning with Concurrent Speech
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Rui Miguel Carrasqueiro Henriques
Title: Learning from High-Dimensional Data using Local Descriptive Models
Supervisor: Professor Sara Alexandra Cordeiro Madeira

Student Name: Samuel Francisco Mascarenhas
Title: Creating Culturally-Adaptive Agents
Supervisor: Professor Ana Maria Severino de Almeida e Paiva
Co-Supervisor: Professor Rui Filipe Fernandes Prada

Student Name: Diogo Miguel da Costa e Castro Mónica de Oliveira
Title: Defeating malicious attacks. A contribution to safe network operations
Supervisor: Professor Carlos Nuno da Cruz Ribeiro

Student Name: João Gonçalves Paiva
Title: Data Placement in Distributed Systems
Supervisor: Professor Luís Eduardo Teixeira Rodrigues

Student Name: Gonçalo Duarte Garcia Pereira
Title: Bases of Social Power for Socially Intelligent Agents
Supervisor: Professor Rui Filipe Fernandes Prada
Co-Supervisor: Professor Pedro Alexandre Simões dos Santos

Student Name: Luís Gabriel Ganchinho de Pina
Title: Practical Dynamic Software Updating
Supervisor: Professor Luís Manuel Antunes Veiga
Co-Supervisor: Professor Michael William Hicks

Student Name: João Pedro Marques Pombinho
Title: Value-oriented Enterprise Transformation: Design and Engineering of Value Networks
Supervisor: Professor José Manuel Nunes Salvador Tribolet
Co-Supervisor: Professor David Sardinha Andrade de Aveiro

Student Name: Hugo Jorge Beja Rito
Title: Exploring the Parallelism of Conflict-Intensive Applications
Supervisor: Professor João Manuel Pinheiro Cachopo

Student Name: José Manuel de Campos Lages Garcia Simão
Title: Economics-inspired Adaptive Resource Allocation and Scheduling for Cloud Environments
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Gonçalo Fernandes Simões
Title: When Speed Has a Price: Fast Information Extraction Using Approximations
Supervisor: Professor Helena Isabel de Jesus Galhardas
Co-Supervisor: Professor Luís Gravano

Student Name: Luís Alexandre Duque Moreira de Sousa
Title: DSL3S: Domain Specific Language for Spatial Simulation Scenarios
Supervisor: Professor Alberto Manuel Rodrigues da Silva

Dual Degree Ph.D. Program in Computer Science (IST-CMU)

Student Name: Wang Ling
Title: Machine Translation 4 Microblogs
Supervisors: Professors Alan W Black, and Isabel Maria Martins Trancoso

8.
Master's Theses

Student Name: Luís Carlos dos Santos Marujo
Title: Event-based Multi-document Summarization
Supervisor: Professor João Paulo da Silva Neto
Co-**Supervisors:** Professors Anatole Gershman, Jaime Carbonell, and David Manuel Martins de Matos

Student Name: João Tiago Rodrigues de Sousa Miranda
Title: Combining multiple parallel streams for improved speech processing
Supervisors: Professors Alan W Black, and João Paulo da Silva Neto
Co-Supervisor: Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur

Erasmus Mundus Joint Doctorate in Distributed Computing (EMJD-DC)

Student Name: Muhammad Amin Khan
Title: Managing Incentives in Community Network Clouds
Supervisor: Professor Luís Eduardo Teixeira Rodrigues
Co-Supervisor: Professor Felix Freitag

In 2015 and 2016, 224 master's theses were successfully defended in the courses coordinated by DEI, 193 in the Master's Degree (MSc) in Computer Science and Engineering (MEIC) and 31 in the Master's Degree (MSc) in Telecommunications and Informatics Engineering (METI). We extend our congratulations to all the students and wish them the best in their future careers. Many of these theses were supervised or co-supervised by DEI members. We also extend our most sincere appreciation to all the colleagues from other departments who participated in the supervision of many of these theses.

In the listings below, theses are ordered by student surname.

Master Degree (MSc) in Computer Science and Engineering (MEIC)

Student Name: Alexandre José Batista Aguiar
Title: Sistema de Ficheiros com Histórico
Supervisor: Professor João Coelho Garcia

Student Name: Artur José Brás Mayer Alkaim
Title: Fast Visualization of Large Architectural Models
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: Ana Patrícia Ribeiro de Almeida
Title: Multimodal Interaction in a Personal Life Assistant for the Elderly
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Ricardo Jorge Ferreira Alqueidão
Title: Managing Innovation in Hospitals
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: Gabriel Gomes Alves
Title: Move With Me: Serious Game for Rehabilitation of Children with Disorders of the Upper and Lower Limbs
Supervisor: Professor Ana Maria Severino de Almeida e Paiva

Student Name: Sérgio Miguel de Albuquerque Alves
Title: Data Center Portal Software Architecture - A NOS Operations and Supervision System
Supervisor: Professor António Manuel Ferreira Rito da Silva

Student Name: Diogo Gonçalo Silva dos Anjos
Title: Real-Time Integration of Building Energy Data
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Nkadi Sebastião António
Title: Suporte ao envolvimento do utilizador em processos de limpeza de dados
Supervisor: Professor Helena Isabel de Jesus Galhardas

Student Name: Miguel Moreira de Figueiredo Osório de Aragão
Title: Towards an Advanced Interoperability Framework Between the Robotic Middlewares YARP and ROS
Supervisors: Professor David Manuel Martins de Matos and Professor Alexandre José Malheiro Bernardino

Student Name: Guilherme de Sousa Aranha
Title: Grid Computing in Organizational Environments
Supervisors: Professor David Manuel Martins de Matos and Professor Nuno Filipe Valentim Roma

Student Name: Gonçalo João Curado Avelar
Title: GreenBrowsing
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Filipe Fernandes Azevedo
Title: A Scalable Architecture for OpenFlow SDN Controllers
Supervisors: Professor Fernando Henrique Côrte-Real Mira da Silva and Professor Luís Jorge Brás Monteiro Guerra e Silva

Student Name: Ana Raquel Correia Bairrão
Title: A Risk Register for Digital Curation aligned with the OAIS reference model
Supervisor: Professor José Luís Brinquete Borbinha

Student Name: Rafael Farias Baltazar
Title: JMLCUTE: Automated JML-Based Unit Test Case Generation
Supervisors: Professor João Carlos Serrenho Dias Pereira and Professor Pedro Miguel dos Santos Alves Madeira Adão

Student Name: Volodymyr Balytskyy
Title: The role of emotional traits in the evolutionary dynamics of Multiplayer Ultimatum Game
Supervisors: Professor Francisco João Duarte Cordeiro Correia dos Santos and Professor Ana Maria Severino de Almeida e Paiva

Student Name: Daniel Filipe Pombo da Silva Baptista
Title: Thematically-Driven Guitar Music Retrieval
Supervisors: Professor David Manuel Martins de Matos and Professor Ricardo Daniel Santo Faro Marques Ribeiro

Student Name: Marta Castro Pina Nunes Baptista
Title: Business Model Innovation using Lean Methodologies for Companies with Established Technologies
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: Vanessa Alves Feliciano Baptista
Title: Diz-me o que escreves dir-te-ei quem és - Processamento de Língua Natural aplicado à literatura
Supervisors: Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur and Professor João Paulo Baptista de Carvalho

Student Name: Duarte Sérgio Ramalho Barbosa
Title: IST Shuttle - Booking, management and monitoring service
Supervisor: Professor Teresa Maria Sá Ferreira Vazão Vasques

Student Name: Carlos Guilherme Crisóstomo Bartolomeu
Title: Dynamic Adaptation of Geo-Replicated CRDTs
Supervisor: Professor Luís Eduardo Teixeira Rodrigues

Student Name: Miguel José Fitas Baúto
Title: RoadAhead - enhanced vision for traffic management
Supervisor: Professor Paulo Jorge Pires Ferreira

Student Name: Miguel Abreu Malafaia Mendes Belo
Title: Automation of Secrecy Proofs for Security of Protocols
Supervisor: Professor Pedro Miguel dos Santos Alves Madeira Adão

Student Name: Gessildo Fernando Bengui
Title: PropertyField Manager - Sistema de Gestão de Regras de Negócio
Supervisor: Professor José Luís Brinquete Borbinha

Student Name: Maria Leonor Ferreira da Costa Cunha Bento
Title: Coverage-based validation of embedded systems
Supervisors: Professor José Carlos Campos Costa and Professor José Carlos Alves Pereira Monteiro

Student Name: Beatriz Vila Bernardo
Title: An Interactive Tangram Game For Autistic Children
Supervisors: Professor Ana Maria Severino de Almeida e Paiva and Professor Francisco António Chaves Saraiva de Melo

Student Name: André José Faria Bico
Title: OpTix versus Embree using Vertex Connection and Merging
Supervisors: Professor João António Madeiras Pereira and Engineer Vasco Alexandre da Silva Costa

Student Name: Miguel Guerreiro Anão Borges
Title: Social-Networking@Edge
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Tiago Miguel Marques Branco
Title: Análise de padrões em Mercados Bolsistas optimizado por algoritmos genéticos utilizando SAX modificado
Supervisors: Professor Rui Fuentecilla Maia Ferreira Neves and Professor Nuno Cavaco Gomes Horta

Student Name: Tiago José Gonçalves Brás
Title: Arquitetura Informacional de Referência para o Setor da Saúde Portuguesa
Supervisor: Professor André Ferreira Ferrão Couto e Vasconcelos

Student Name: Gonçalo Rodrigues Cadete
Title: Using Enterprise Architecture for COBIT 5 Process Assessment and Process Improvement
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: Francisco Manuel Maya Murias de Melo Campelo
Title: Aplicação móvel para visualização de uma história localizada no espaço (localized storytelling)
Supervisor: Professor João Coelho Garcia

Student Name: Filipe Pascoal Martins Carapeto
Title: Técnicas de Aproximação para a Betweenness em Redes de Grande Dimensão
Supervisors: Professor Alexandre Paulo Lourenço Francisco and Professor Luís Manuel Silveira Russo

Student Name: Mário Augusto Rodrigues Cardoso
Title: Tool for Managing IS Benefits
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Engineer João Correia Louro

Student Name: Tiago Martins Catarino
Title: Role of the Chief Information Security Officer
Supervisors: Professor André Ferreira Ferrão Couto e Vasconcelos and Professor Miguel Leitão Bignolas Mira da Silva

Student Name: José Miguel Castanheira Cavalheiro
Title: A Multidimensional Model for Building Energy Management
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Jorge Miguel Trigo Coelho
Title: Fine-Tuning HVAC Operation Through RFID and User Feedback
Supervisors: Professor Paulo Jorge Fernandes Carreira and Professor Miguel Filipe Leitão Pardal

Student Name: Samuel Filipe Capucho Mendes Coelho
Title: Smart places: A framework to develop proximity-based mobile applications
Supervisors: Professor Miguel Filipe Leitão Pardal and Professor José Manuel da Costa Alves Marques

Student Name: Sara Maria Cordo
Title: Fingerpointer - Pointing Gestures for Collaborative Robots
Supervisors: Professor Alexandre José Malheiro Bernardino and Professor Mário Rui Fonseca dos Santos Gomes

Student Name: Filipa Isabel Nogueira Correia
Title: EMYS: a social robot that plays "Sueca"
Supervisors: Professor Ana Maria Severino de Almeida e Paiva and Professor Francisco António Chaves Saraiva de Melo

Student Name: Hugo Filipe Fonseca Correia
Title: P2R: Implementation of Processing in Racket
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: José Miguel Pinheiro Correia
Title: Syntax Deep Explorer
Supervisors: Professor Nuno João Neves Mamede and Professor Jorge Manuel Evangelista Baptista

Student Name: Rafael Vassalo Cortês
Title: CloudBox: Private, Reliable and Distributed Storage
Supervisors: Professor Pedro Miguel dos Santos Alves Madeira Adão and Professor Luís Manuel Antunes Veiga

Student Name: Miguel Rodrigues Bento Barros da Costa
Title: TrUbi - Mobile Operating System Security
Supervisors: Professor Paulo Jorge Pires Ferreira and Professor Nuno Miguel Carvalho dos Santos

Student Name: Nuno Alexandre Pinto da Costa
Title: Believable Interactions Between Synthetic Characteres
Supervisor: Professor Carlos António Roque Martinho

Student Name: Pedro Alejandro Jorges de Magalhães Costa
Title: Implementing ITIL using a Workflow Tool
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: André Gonçalo Batista Correia da Cruz
Title: An Information Systems Reference Architecture for the CRM domain
Supervisor: Professor André Ferreira Ferrão Couto e Vasconcelos

Student Name: Auguste Antoine Cunha
Title: Swarm Intelligence in Strategy Games
Supervisors: Professor Pedro Alexandre Simões dos Santos and Professor Carlos António Roque Martinho

Student Name: Rita Peres Cruz Curado
Title: Linked Product Data
Supervisors: Professor Miguel Filipe Leitão Pardal and Professor José Manuel da Costa Alves Marques

Student Name: Cátia Andreia Gomes Dias
Title: TalKit: Desenvolvimento de um sistema de diálogo para português
Supervisor: Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur

Student Name: Francisco Manuel Carvalho Dias
Title: Multilingual Automated Text Anonymization
Supervisors: Professor Nuno João Neves Mamede and Doctor João de Almeida Varelas Graça

Student Name: João Luís Gonçalves Domingos
Title: Website file download acceleration using WebRTC
Supervisor: Professor Ricardo Jorge Feliciano Lopes Pereira

Student Name: Pedro Gonçalo Pinto Domingues
Title: A Modular Software Architecture to Cope With Automation Hardware Heterogeneity
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Carlos Manuel Rodrigues Duarte
Title: Audio Cover Song Identification
Supervisor: Professor David Manuel Martins de Matos

Student Name: Nuno Miguel de Oliveira Duarte
Title: On the Effectiveness of Trust Leases in Securing Mobile Applications
Supervisors: Professor Paulo Jorge Pires Ferreira and Professor Nuno Miguel Carvalho dos Santos

Student Name: André Nicolau Fernandes
Title: An Evolutionary Computing Approach to Financial Portfolio Management Based on Growth Stocks & Sector/Industry Distribution
Supervisors: Professor Rui Fuentecilla Maia Ferreira Neves and Professor Nuno Cavaco Gomes Horta

Student Name: Rodrigo Tavares Fernandes
Title: Green-Cloud: Economics-inspired Scheduling, Energy and Resource Management in Cloud Infrastructures
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Telma Filipa de Carvalho Fernandes
Title: A software infrastructure for the CLEENEX optimizer
Supervisor: Professor Helena Isabel de Jesus Galhardas

Student Name: Tiago José Perdigão Fernandes
Title: GeoBiblio – base de dados bibliográfica georeferenciada
Supervisor: Professor João Nuno de Oliveira e Silva

Student Name: António de Sousa Ferreira
Title: Plataforma de Formulários Eletrónicos
Supervisors: Professor José Luís Brinquete Borbinha and Engineer Paulo Alexandre Rodrigues dos Santos

Student Name: Bruno Filipe Belo Ferreira
Title: Generative Design for Building Information Modeling
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: Guilherme Ferreira
Title: An Enhanced Programming Environment for Generative Design
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: Jaime Rodrigues Ferreira
Title: Incremental Learning of Probabilistic Models in High-Dimensional Space
Supervisors: Professor David Manuel Martins de Matos and Professor Ricardo Daniel Santos Faro Marques Ribeiro

Student Name: Pedro Miguel Andrade Ferreira
Title: Application of Scheduling Techniques to Teacher-Class Assigments
Supervisors: Professor João Emílio Segurado Pavão Martins and Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur

Student Name: Susana Cardoso Ferreira
Title: Parallel XML Matching Algorithm for Publish/Subscribe Systems
Supervisor: Professor João Carlos Serrenho Dias Pereira

Student Name: Vasco Pinto Ferreira
Title: Using Textual Transcripts of Parliamentary Interventions for Profiling Portuguese Politicians
Supervisors: Professor Bruno Emanuel da Graça Martins and Professor David Manuel Martins de Matos

Student Name: Paulo César Dias Figueiredo
Title: Video Summaries for Science Talks
Supervisors: Professor David Manuel Martins de Matos and Professor Ricardo Daniel Santos Faro Marques Ribeiro

Student Name: Ana Patrícia Fred Filipe
Title: CoBelievable: the effect of Cooperation in Believability
Supervisors: Professor Carlos António Roque Martinho and Professor João Miguel de Sousa de Assis Dias

Student Name: Jorge Miguel Saldanha Filipe
Title: Where Have I Been - Visualizing Personal Geolocation Data
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Paulo Roberto Carvalho Nunes Filipe
Title: Model-Driven Development Approach for Content Management Systems based Applications
Supervisor: Professor Alberto Manuel Rodrigues da Silva

Student Name: João Filipe Garrett Paixão Florêncio
Title: Test Accelerator for Service Oriented Architectures (SOA-Test Accelerator)
Supervisor: Professor José Carlos Campos Costa

Student Name: Filipe Luís Felício Fortes
Title: Coup Agents: Agents that play a deception game
Supervisor: Professor Ana Maria Severino de Almeida e Paiva

Student Name: Tiago André da Silva Francisco
Title: CLEENEX - Debugger
Supervisor: Professor Helena Isabel de Jesus Galhardas

Student Name: Miguel Brito Franco
Title: Categorical representation of seaman's knots
Supervisor: Professor Andreas Miroslaus Wichert

Student Name: Alexandre Santos Frazão
Title: Interoperação num sistema de gestão documental
Supervisors: Professor José Luís Brinquete Borbinha and Engineer Fernando Jorge Costa da Silva Faria

Student Name: Alexandre Pedro Gomes Freitas
Title: My Army: Strategy game engine
Supervisor: Professor Pedro Alexandre Simões dos Santos

Student Name: André Filipe Duarte Garção
Title: Sistema de Controlo de Iluminação Distribuído
Supervisor: Professor Renato Jorge Caleira Nunes

Student Name: Marcos Sebastião Pereira Germano
Title: MySportsFace
Supervisor: Professor João Manuel Brisson Lopes

Student Name: Miguel Filipe Paisana Gil
Title: Visualizing Software Models
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: José Luís Domingues Góis
Title: Interfaces Inteligentes para Casas Inteligentes
Supervisor: Professor Renato Jorge Caleira Nunes

Student Name: Ana Karina Tavares da Moura Gomes
Title: Fractal Dimension and Space Filling Curve
Supervisor: Professor Andreas Miroslaus Wichert

Student Name: Marcus Vinícius Paulino Gomes
Title: Cloud4Things: Using Cloud infrastructure to support Smart Place applications
Supervisors: Professor Miguel Filipe Leitão Pardal and Professor José Manuel da Costa Alves Marques

Student Name: Pedro André Dominguez Alves Gomes
Title: Track It (Again)
Supervisor: Professor João Manuel Brisson Lopes

Student Name: Daniel Dias Gonçalves
Title: Automatic Diagnosis of Security Events in Complex Infrastructures using Logs
Supervisors: Professor Miguel Nuno Dias Alves Pupo Correia and Engineer João Duarte Parrinha Bota

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Title: ShareIff: A Sticky Policy Middleware for Self-Destructing Messages in Android Applications
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Title: BOAv3 - Learning Object Pool
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Title: RRHE: Remote Replication of Human Emotions
Supervisor: Professor Artur Miguel do Amaral Arsénio

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Title: Cooperation through Reinforcement Learning in a Collaborative Game
Supervisors: Professor Rui Filipe Fernandes Prada and Professor Francisco António Chaves Saraiva de Melo

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Title: TUx: Testing UX between Web Frameworks
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

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Title: Comparador de Preços Inteligente
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Title: ProntApp: a mobile question answering application for medicines
Supervisors: Professor Helena Isabel de Jesus Galhardas and Professor Paulo Jorge Pires Ferreira

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Title: Memento: Sumarização Interativa de Coleções de Fotografias
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: José António dos Santos Rodrigues Leira
Title: Associative Memory and Information Retrieval
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Title: Adaptive Search Radius for BitTorrent Swarms
Supervisor: Professor Ricardo Jorge Feliciano Lopes Pereira

Student Name: Bruno Rodrigues Timóteo Lopes
Title: ShopAssist - A Unified, Interactive, Location-Aware System for Shopping
Supervisor: Professor Ricardo Jorge Feliciano Lopes Pereira

Student Name: Hugo Manuel Antunes Lopes
Title: Influence and Sentiment Homophily on Twitter
Supervisors: Professor Helena Sofia Andrade Nunes Pereira Pinto and Professor Alexandre Paulo Lourenço Francisco

Student Name: Rodrigo José Madeira Lourenço
Title: Cycle Our City goes mobile
Supervisor: Professor João Pedro Faria Mendonça Barreto

Student Name: Sandra Maria de Babo Lourenço
Title: Syntactic REAP.PT: Exercises on Passive Transformation
Supervisors: Professor Nuno João Neves Mamede and Professor Jorge Manuel Evangelista Baptista

Student Name: Nuno Filipe de Matos Monteiro Maia
Title: I Play, You Play: A Framework for Card Games in a Multitouch Table
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Student Name: Rui Filipe Pedroso Maia
Title: Contextual Food Recommendation Through Factorization Machines
Supervisors: Professor Bruno Emanuel da Graça Martins and Professor Pável Pereira Calado

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Title: Analysis and Requirements Gathering of User Interfaces for Home Automated Systems
Supervisor: Professor Paulo Jorge Fernandes Carreira

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Title: Detecting Contradictions in News Quotations
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Title: Using Gamification for Reducing Infections in Hospitals
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Professor Luís Velez Lapão

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Title: Gacuda - a Genetic Algorithm Framework over GPUs
Supervisor: Professor José Carlos Alves Pereira Monteiro

Student Name: Carlos Xavier da Silva Martins
Title: Parallelization of a Probabilistic Algorithm for Simulating Electromagnetic Problems
Supervisors: Professor Juan Antonio Acebrón Torres and Professor José Carlos Alves Pereira Monteiro

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Title: Cone Tracing of Human Hair Fibers
Supervisors: Professor João António Madeiras Pereira and Doctor Vasco Alexandre da Silva Costa

Student Name: Ricardo Jorge Seno Martins
Title: Reference Requirements for Records and Documents Management
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Title: Especificação de Interrogações para Recuperação 3D em Ambiente Imersivo
Supervisor: Professor Alfredo Manuel dos Santos Ferreira Júnior

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Title: Cloud-based Facility Management Benchmarking
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Sebastião Ramalho Murteira Viana Maya
Title: ChemCreator: A Game of Chemistry
Supervisor: Professor Rui Filipe Fernandes Prada

Student Name: Fernando José Soares Melo
Title: Automatically Georeferencing Textual Documents
Supervisor: Professor Bruno Emanuel da Graça Martins

Student Name: Vânia Patrícia Padrão Mendonça
Title: Project: Extending VITHEA in order to improve children's linguistic skills
Supervisors: Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur and Professor José Alberto Rodrigues Pereira Sardinha

Student Name: Francisco de Freitas Vilar Morais
Title: ARENA: Asserting the quality of modeling languages
Supervisor: Professor Alberto Manuel Rodrigues da Silva

Student Name: Manuel Maria Costa Duarte de Menezes de Morais
Title: Reimplementing a Strategy Game Interface
Supervisor: Professor Pedro Alexandre Simões dos Santos

Student Name: Rui Diogo de Sousa Morais
Title: SecureTracking: secure position monitoring of children and people with mental disabilities
Supervisors: Professor Ricardo Jorge Fernandes Chaves and Professor João Pedro Faria Mendonça Barreto

Student Name: Pedro Miguel Grosso Moreira
Title: Compilation of OpenCL Programs for Stream Processing Architectures
Supervisors: Professor David Manuel Martins de Matos and Professor Pedro Filipe Zeferino Tomás

Student Name: Vera Lúcia de Jesus Moreira
Title: A Service to Manage Benefits
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Engineer João Correia Louro

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Title: Interactive Television: An Open Framework for Media Graphics Interoperability using X3DOM and WebRTC
Supervisor: Professor João Manuel Brisson Lopes

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Title: Estratégia de Investimento Value Optimizada por Algoritmos Genéticos Distribuídos
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Title: Vectores de Fortran em C
Supervisor: Professor Pedro Manuel Guerra Silva Reis dos Santos

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Title: Debt Analytics: Proactive prediction of debtors in the telecommunications industry
Supervisors: Professor Francisco António Chaves Saraiva de Melo and Professor José Alberto Rodrigues Pereira Sardinha

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Title: Multi-dimensional Self-tuning in Transactional Memory
Supervisor: Professor Paolo Romano

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Title: Modelling on Interactive Surfaces for 3D Fabrication
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Student Name: David Jorge Marques Nogueira
Title: Armário de Medicamentos - Gestão Terapêutica
Supervisor: Professor Renato Jorge Caleira Nunes

Student Name: Clara Bernardo de Paiva
Title: Hierarchical Associative Memories and Sparse Coding
Supervisor: Professor Andreas Miroslaus Wichert

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Title: Emulação de título de transporte seguro em telemóvel Android
Supervisor: Professor Alberto Manuel Ramos da Cunha

Student Name: Duarte Tovar de Carvalho Patricio
Title: Garbage Collection Optimization for JVM running Big Data Workloads
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Denise Sofia Tavares Pedro
Title: Reference Requirements Documents Manager
Supervisor: Professor José Luís Brinquete Borbinha

Student Name: Ana Rita da Costa Pereira
Title: Predicting conversion from mild cognitive impairment to Alzheimer's Disease using ensemble learning
Supervisor: Professor Sara Alexandra Cordeiro Madeira

Student Name: Pedro Miguel Henriques Pereira
Title: Modelling Progression in Video Games
Supervisor: Professor Carlos António Roque Martinho

Student Name: Sancha Cipriano Pereira
Title: Storekeeper: A Security-Enhanced Cloud Storage Aggregation Service
Supervisors: Professor Nuno Miguel Carvalho dos Santos and Professor Ricardo Jorge Fernandes Chaves

Student Name: Miguel Alexandre Sequeira Pernas
Title: TrackIt (Better!) Melhorar Aplicações GPS para Desportos e Atividades ao Ar Livre
Supervisor: Professor João Manuel Brisson Lopes

Student Name: Pedro Miguel Almeida Inácio Pexirra
Title: Optimização de processos de middleware
Supervisor: Professor Luís Manuel Silveira Russo

Student Name: Ângelo Miguel Belchior Tomé Pilão
Title: Modelo de Maturidade de uma Arquitectura Orientada a Serviços
Supervisors: Professor André Ferreira Ferrão Couto e Vasconcelos and Professor Miguel Leitão Bignolas Mira da Silva

Student Name: Pedro Miguel Ferreira Pimentel
Title: Gameplay Aware Emotional Model for Virtual Characters in Video Games
Supervisor: Professor Carlos António Roque Martinho

Student Name: Fábio Miguel Gonçalves Pinheiro
Title: Modelação Geométrica com Restrições
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: João Pedro Rocha Pinho
Title: Framework Blueprint for Building Energy Management Systems
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Daniel Filipe Soares Pinto
Title: specSTM: Software Transactional Memory with Thread-Level Speculation Support
Supervisor: Professor João Pedro Faria Mendonça Barreto

Student Name: Diogo Filipe dos Reis Pinto
Title: Gestão de Projectos e Gestão da Manutenção nas direcções de Sistemas de Informação
Supervisors: Professor José Luís Brinquete Borbinha and Engineer Miguel Ângelo Cotrim Bentes

Student Name: Joana Catarina Lapas Pinto
Title: Fine-grained POS-tagging: Full disambiguation of Verbal Morpho-syntatic Tags
Supervisors: Professor Nuno João Neves Mamede and Professor Jorge Manuel Evangelista Baptista

Student Name: Rita Alexandra Correia Soares Amaro Policarpo
Title: Semantic Classification of Nouns
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Student Name: João Carlos de Oliveira Quintas
Title: MIPSter32 - A 32 bit MIPS Simulator
Supervisors: Professor Nuno Miguel Carvalho dos Santos and Professor José Carlos Alves Pereira Monteiro

Student Name: João Luis Lopes Quitério
Title: A Reinforcement learning approach for the circle agent of Geometry Friends
Supervisors: Professor Rui Filipe Fernandes Prada and Professor Francisco António Chaves Saraiva de Melo

Student Name: Rafael Vilela Pinheiro de Passos Ramos
Title: Procedural Content Generation for Cooperative Games
Supervisors: Professor Rui Filipe Fernandes Prada and Professor Carlos António Roque Martinho

Student Name: Rafael Vilela Pinheiro de Passos Ramos
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Student Name: Rúben da Costa Raposo
Title: Semantic Classification of Locations in Human Trajectories Using Hidden Markov Models
Supervisor: Professor Bruno Emanuel da Graça Martins

Student Name: André Alves Gomes Rei
Title: Profiling Agent and Rule-set Optimization in Misuse Based Intrusion Detection Systems
Supervisor: Professor Carlos Nuno da Cruz Ribeiro

Student Name: Rafael José Trindade Reia
Title: Refactoring Dynamic Languages
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: Yesika Paula Pereira Reinolds
Title: PATETA: PATterns for EnTerprise reference Architectures
Supervisor: Professor André Ferreira Ferrão Couto e Vasconcelos

Student Name: Manuel Barreto Lima Reis
Title: Towards the Study of Human Emotions Through Social Media Contents
Supervisor: Professor Bruno Emanuel da Graça Martins

Student Name: Manuel Borges Dias dos Reis
Title: Computational prediction of miRNA targets in plant genomes
Supervisors: Professor Ana Teresa Correia de Freitas and Doctor Nuno Miguel Dias Mendes

Student Name: Nuno Tiago Lopes dos Reis
Title: Coherent Ray-Space Hierarchy via Ray Hashing and Sorting
Supervisor: Professor João António Madeiras Pereira

Student Name: Daniel Valentim Ribeiro
Title: Televisão Interactiva: Uma plataforma de desenvolvimento sobre HTML5 e tecnologias associadas
Supervisor: Professor João Manuel Brisson Lopes

Student Name: Fábio André Raposo Ribeiro
Title: Attendance Registration and Occupancy Estimation using Indoor Positioning Systems
Supervisors: Professor Fernando Henrique Côrte-Real Mira da Silva and Professor Ricardo Jorge Feliciano Lopes Pereira

Student Name: Tiago Lemos da Costa Neves Ribeiro
Title: Visualização Avançada para Process Mining
Supervisor: Professor Diogo Manuel Ribeiro Ferreira

Student Name: Nuno Paulo Rocha Roboredo
Title: Collaborative Method to Develop an Enterprise Architecture in a Public Institution
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Professor Anacleto Cortez e Correia

Student Name: Hugo André Martins Rocha
Title: Business simulation test Automation applied to Portuguese Social Security
Supervisor: Professor José Manuel da Costa Alves Marques

Student Name: Joana Sofia Dias Rocha
Title: Resolving Named Entities and Relations in Text for Applications in Literary Studies
Supervisors: Professor Pável Pereira Calado and Professor Bruno Emanuel da Graça Martins

Student Name: André Filipe Pereira Rodrigues
Title: Extensible User-friendly Rule System for connecting Internet Services
Supervisors: Professor José Manuel da Costa Alves Marques and Professor Miguel Filipe Leitão Pardal

Student Name: Sara Carolina Gouveia Rodrigues
Title: Temporal Sequence Classification in the Presence of Background Domain Knowledge
Supervisor: Professor Cláudia Martins Antunes

Student Name: Vasco André Teixeira Rodrigues
Title: Manipulações de Modelos 3D no Espaço em Ambientes Virtuais (Semi) Imersivos
Supervisors: Professor Alfredo Manuel dos Santos Ferreira Júnior and Professor Joaquim Armando Pires Jorge

Student Name: Diogo Andre da Silva Romão
Title: Very Fast Image Retrieval
Supervisors: Professor Andreas Miroslaus Wichert and Professor João Carlos Serrenho Dias Pereira

Student Name: Cátia Vanessa Alves Braz de Matos Rosa
Title: iPad Apps in Teaching Programs for kids with Autism Spectrum Disorder
Supervisor: Professor José Alberto Rodrigues Pereira Sardinha

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Title: Cinema at the service of Natural Language Processing
Supervisors: Professor David Manuel Martins de Matos and Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur

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Title: Social Sharing of Emotions for Intelligent Agents
Supervisors: Professor João Miguel de Sousa de Assis Dias and Professor Ana Maria Severino de Almeida e Paiva

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Supervisor: Professor Luís Eduardo Teixeira Rodrigues

Student Name: Catarina Isabel Carvalho Santana
Title: Collaborative Platform for Analysis of Software Systems
Supervisor: Professor António Manuel Ferreira Rito da Silva

Student Name: André Filipe Braz dos Santos
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Student Name: Fernando César Silva Teixeira dos Santos
Title: Automatic Generation of Exercises for Massive Open Online Courses (MOOCs)
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Student Name: Luís Filipe Amaral Pinhancos dos Santos
Title: Chatbots: On Demand Creation of Conversational Agents
Supervisor: Professor Maria Luísa Torres Ribeiro Marques da Silva Coheur

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Title: The XIS-Web Technology: A Model-Driven Development Approach for Responsive Web Applications
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Title: XIS-Analytics: A Domain Specific Language for Data Analysis
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Student Name: David Gonçalo Branco da Silva
Title: MiniPool: Real-time artificial player for a 8-Ball video game
Supervisor: Professor Rui Filipe Fernandes Prada

Student Name: João Bruno Rodrigues Roque e Silva
Title: Efficient Free-rider Detection using Symmetric Overlays
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Title: ETL na era do Big Data
Supervisors: Professor Helena Isabel de Jesus Galhardas and Doctor João Carlos Pereira Damásio

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Title: Parallel Implementation of Data Balancing Algorithms
Supervisors: Professor José Carlos Alves Pereira Monteiro and Professor João Filipe Dias Rodrigues

Student Name: José Miguel Gonçalves Simões
Title: Self-tuning the parallelism degree in Parallel-Nested Software Transactional Memory
Supervisors: Professor Paolo Romano and Professor João Pedro Faria Mendonça Barreto

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Title: The Effect of Theory of Mind in Detecting Deception
Supervisors: Professor Ana Maria Severino de Almeida e Paiva and Professor João Miguel de Sousa de Assis Dias

Student Name: Pedro Miguel Gato Soldado
Title: Toolkit For Gesture Classification Through Acoustic Sensing
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Title: Keyword Based Framework for DLNA Acceptance Testing
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Student Name: Gonçalo Nuno da Costa Teixeira de Sousa
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Title: Developing an IS as a New Business
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Supervisor: Professor Alberto Manuel Rodrigues da Silva

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Title: Software Architecture of a Insurance System based on Services
Supervisor: Professor António Manuel Ferreira Rito da Silva

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Title: SleeveAr: Augmented Reality for Rehabilitation Using Realtime Feedback
Supervisor: Professor Joaquim Armando Pires Jorge

Student Name: Renato Filipe Gonçalves Vieira
Title: Building Information Modelling for Building Control
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Tiago Manuel Ferreira Matamouros Vieira
Title: Improve the ITIL process in Incident Management with matching Lean-eTOM
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Student Name: Gayana Ranganatha Chandrasekara Pilana Withanage
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Title: Personalized Food Recommendations Exploring Content-Based Method
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Title: Cloud-based Wireless Sensor Network System for Smart Livestock Monitorization
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Title: NFC4Sure: Mobile Ticketing System
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Title: Construção de Metamodelos de Simulação Estocástica Utilizando Splines
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Title: P-Cop: Securing PaaS Against Cloud Administration Threats
Supervisor: Professor Nuno Miguel Carvalho dos Santos

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Title: Privacy Enhanced Voice Recognition
Supervisors: Professor Carlos Nuno da Cruz Ribeiro and Professor Alberto Abad Gareta

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Title: SLOC-Sistema para Serviços Baseados na Localização
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Student Name: Miguel de Almeida Vasconcelos Raposo de Carvalho
Title: RemoteUI A Middleware for user interaction mobile applications
Supervisor: Professor João Nuno de Oliveira e Silva

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Title: BOAv3/DashVis: Visualization Dashboard applied to Lesrning Objects Repository
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Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Simon Filipe Pacheco Esposito
Title: STORK Secure idenTty crOss boRder linKed - eLearning and Academic Qualifications Pilot at IST
Supervisors: Professor Carlos Nuno da Cruz Ribeiro and Professor Fernando Henrique Côrte-Real Mira da Silva

Student Name: Ines Aguiar Fernandes
Title: Binary Aggregation for Book Retrieval
Supervisor: Professor Andreas Miroslaus Wichert

Student Name: Nuno Alvarez Fernandes
Title: Reliable electronic certification on mobile devices
Supervisor: Professor Ricardo Jorge Fernandes Chaves

Student Name: João Pedro Relvas de Jesus Granchinho
Title: REVLoc - Robust, Energy Efficient and Versatile Localization for Mobile Devices
Supervisor: Professor Paulo Jorge Pires Ferreira

Student Name: António Paulo Cardoso Jr
Title: Dashboards of Service Fulfilment and Assurance for Mobile: Multi-platform versus Native
Supervisor: Professor Rui António dos Santos Cruz

Student Name: José Júlio Rodrigues Lucas
Title: Measurement Study of Peer-to-Peer Multimedia Streaming Systems
Supervisors: Professor Mário Serafim dos Santos Nunes and Professor Rui António dos Santos Cruz

Student Name: Paulo Jorge Pontes Martins
Title: OSS Interface for HP Service Activator
Supervisor: Professor Rui António dos Santos Cruz

Student Name: Helton Luís Semedo Craveiro Miranda
Title: TimelyWare: a Midleware for Timely and Realiable Communication over the Internet
Supervisor: Professor Miguel Nuno Dias Alves Pupo Correia

Student Name: Sérgio Marques Moura
Title: Floodgate: An Information Flow Control Platform for Distributed Mobile Applications
Supervisor: Professor Nuno Miguel Carvalho dos Santos

Student Name: Dário Fernando Rodrigues Nascimento
Title: Recovery from Security Intrusions in Cloud Computing
Supervisor: Professor Miguel Nuno Dias Alves Pupo Correia

Student Name: Rui Miguel Pinheiro Pires
Title: Segurança da Comunicação em Redes de Sensores em Malha
Supervisor: Professor: Miguel Nuno Dias Alves Pupo Correia

Student Name: Nuno André Mendes Pissarra
Title: Cryptographic Functions on the SideWorks architecture
Supervisor: Professor Ricardo Jorge Fernandes Chaves

Student Name: João Bruno Trindade Albuquerque Ala de Rezende
Title: Customer Relationship Management in University Environment
Supervisors: Professor José Luís Brinquete Borbinha and Professor Fernando Henrique Côrte-Real Mira da Silva

Student Name: Henrique Duarte Lopes Rocha
Title: Hyper-linked Communicatios: WebRTC enabled asynchronous collaboration
Supervisors: Professor Ricardo Jorge Feliciano Lopes Pereira and Engineer Paulo Guilherme Gonçalves Chainho

Student Name: Nelson Filipe Dias Sales
Title: Cloud-based Wireless Sensor and Actuator System for Smart Irrigation
Supervisor: Professor Artur Miguel do Amaral Arsénio

Student Name: Miguel Madeira Teixeira
Title: Monotoring Wireless Networks Through Machine Learning Algorithms
Supervisor: Professor Fernando Henrique Côrte-Real Mira da Silva

Student Name: Guilherme Lereno Santos Vale
Title: Raspberry Drone: Unmanned Aerial Vehicle (UAV)
Supervisors: Professor Nuno Filipe Valentim Roma and Professor Ricardo Jorge Fernandes Chaves

9.
Staff

The faculty of the Computer Science and Engineering Department has 80 professors. This includes 10 full professors, 20 associate professors and 42 assistant professors. Furthurmore, the Department also has 8 invited assistant professors.

Each faculty member belongs to one of the five scientwific areas of the Department. As a result, the number of faculty members (including invited professors) in each area is as follows: Architecture and Operative Systems (18 professors), Computer Graphics and Multimedia (11 professors), Artificial Intelligence (14 professors), Methodology and Technologies of Programming (19 professors) and Information Systems (18 professors).

The administrative staff at DEI includes 1 coordinator and 9 collaborators.

Secretariats

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Av. Professor Cavaco Silva
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Pedro Miguel dos Santos Alves Madeira Adão

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Research Areas and Interests
Pedro Adão is a researcher at the Security and Quantum Information Group at Instituto de Telecomunicações. His major research interests are Mathematical Foundations of Cryptography, Specification and Verification of Cryptographic Protocols, Verification of Secure Software, and ``Physical'' and ``Day-life'' Cryptography.

Academic Info and Highlights
Pedro Adão is the co-leader of the FCT-funded project Confident, and a member of the ICT COST Action IC1306, Cryptography for Secure Digital Interaction. He is the General Chair of IEEE Computer Security Foundations Symposium for the years of 2016 and 2017. Pedro Adão has taught the MSc course on Specification of Software and the PhD courses Computational Models in Security, and Security Engineering, and is a faculty member of the FCT-Doctoral Programme in the Physics and Mathematics of Information. He received the ``Excellence in Teaching in IST"'' award in 2016. He currently leads the Security Team@Tecnico initiative, a team of students that participates in security-related competitions.

Fausto Jorge Morgado Pereira de Almeida

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Research Areas and Interests
Fausto Almeida is a member of the Artificial Intelligence group of DEI. Main interests on search and optimization algorithms applied to public transportation. This includes timetabling for railway companies and crew assignment for transportation companies.

Academic Info and Highlights
Courses lectured recently: Foundations of Programming, Logic for Programming, Search and Planning and Artificial Intelligence.

Cláudia Martins Antunes

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Research Areas and Interests
Cláudia Antunes research interests are in the area of machine learning and data science, in particular temporal data mining, domain driven data mining and its semantic aspects. She leads research projects on data science, using education and healthcare as privileged fields for applying the developed methods and methodologies. She has about seventy papers published in international conferences and journals.

Academic Info and Highlights
Cláudia Antunes lectures courses related to machine learning and data science in undergraduate and postgraduate programs, along with foundations of programming in undergraduate programs

João Pedro Faria Mendonça Barreto

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Research Areas and Interests
He is a member of the Distributed Systems Group, at INESC-ID. His main research interests are concurrent programming, operating systems, non-volatile memory, data deduplication, mobile computing, replication and consistency.

Academic Info and Highlights
Started a new H2020 Project, called "TRACE - Walking and Cycling Tracking Services", where he coordinates the local team at INESC-ID. Successfully concluded the Spec-TM project, funded by FCT, where he was Principal Researcher. Co-chaired the Large-Scale Parallel and Distributed Computation track at INForum 2015 and 2016. Awarded for excellent pedagogical results while teaching the Operating Systems course in 2015.

José Luis Brinquete Borbinha

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Research Areas and Interests
José Borbinha is the coordinator of the IDSS Research Group at the INESC-ID (http://idss.inesc-id.pt/). His main research interests comprise conceptual analysis and modeling of systems, Enterprise Architecture, Requirements Engineering, and information management in general (including digital libraries, digital preservation, records management and scientific data management)

Academic Info and Highlights
José Borbinha is the local PI of the international research project E-ARK. He is the chair of the steering committees of the TPDL conference, and member of the steering committee of the iPRES conference. He has been the responsible professor or the courses Analysis and Modeling of Information Systems (graduating level), Information Systems Fundamentals (Master level), and Conceptual Modeling of Systems (Doctoral level)

Artur Miguel Pereira Alves Caetano

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Research Areas and Interests
Business Process Management, Enterprise Modelling, Conceptual Modelling

Academic Info and Highlights
I am a tenured assistant professor of Information Systems at IST and lecture on enterprise architecture, business process management and conceptual modelling. My research area is the representation, analysis and design of enterprise models, which intersects conceptual modelling, semantic web, knowledge representation and data analytics. I develop my research at INESC-ID's IDSS and work as consultant at INESC-INOV. I regularly participate in consultancy projects and in European framework R&D programme projects. I am a member of ACM, IEEE and the Enterprise Engineering Network.

Pável Pereira Calado

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Research Areas and Interests
Pável Pereira Calado is currently interested in the areas of information retrieval, information extraction, and recommender systems. More specifically, he is interested in applying machine learning techniques to the processing of textual documents in order to extract information therein contained, such as named entities and relations, opinions, sentiments, or to answer the information needs of users.

Academic Info and Highlights
Received 3 Best Student Paper awards and 1 Best Paper award in top international conferences. General chair for the First and Second DataStorm Big Data Summer Schools. Member of organizing committees for two national and one international conferences. Member of program committees for more than ten international conferences. Published more than 70 papers in top international journals and conferences.

Paulo Jorge Fernandes Carreira

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Research Areas and Interests
Paulo's current research primarily focuses on the agile creation of highly modular software for data intensive applications such as Energy Management and Building Control. Paulo's research also focuses on Data Integration techniques for streaming real-time data and their integration with Building Information Models (BIM).

Academic Info and Highlights
Paulo Carreira is a Senior Researcher at INESC-ID and lecturer of Software Engineering and Database Subjects at IST. He is the co-organizer of multiple summer schools and international workshops on the topics of Energy and Real-Time data. Researcher in multiple high visibilities publicaly funded national and European research projects. Committee Member for the "Multi-Paradigm Modeling for Cyber-Physical Systems (MPM4CPS) EU COST Action. IEEE Senior Member.

**Maria do Rosário Gomes Osório Bernardo Ponces de Carvalho**

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Research Areas and Interests
Program and project management; Project governance; Risk management

Academic Info and Highlights
Investigadora INESC
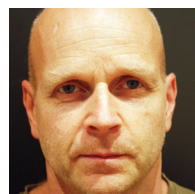
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Research Areas and Interests
Interested in mathematical modelling, formal specification and verification. Current research involves design and verification of security protocols, and language based information flow security.

Academic Info and Highlights
Researcher in the Security and Quantum Information group of Instituto de Telecomunicações. Member of the FCT-funded project Elven -¬ Expressive Logics for VErifying the Net.
Teaching the BSc courses of Foundations of Programming and Introduction to Algorithms and Data Structures.

Ricardo Jorge Fernandes Chaves

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Research Areas and Interests
His research interests are focused on cryptography systems, reconfigurable hardware architectures, and on embedded and user oriented systems

Academic Info and Highlights
He has published more than 50 papers in international journals and conferences, with more than 700 citations on Google Scholar, with an h-index of 14. Supervised more than 25 MSc students and one PhD student.
Professionally, he is the vice coordinator of the embedded lab of INESC-ID and the scientific coordinator of the Signal Processing Group.
He is an active member of HiPEAC3 and is in the Management Committee of EU COST Actions TRUDEVICE and CRYPTARCUS (vice-leader of WG3). Is a technical adviser for the Portuguese National Security Cabinet (since 2008). As also server in the program committee and track chair of several international conferences and is a senior member of IEEE. He is involved in several ongoing European projects.

Maria Luísa Torres Ribeiro Marques da Silva Coheur

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Research Areas and Interests
Language acquisition, Natural Language Understanding, Dialogue Systems, Question Answering and Machine Translation.

Academic Info and Highlights
Teaches Logic for Programming (LEIC-T) and Natural Language (MEIC-T). Received the "Excellence in Teaching" award. Participated in several National (eSPERTo and INSIDE) and European Projects (SpeDial, Law-Train, Rage). Member of the COST European Network on Integrating Vision and Language. Organiser of "Verão na Universidade de Lisboa", Tagus campus. Sabbatical leave (2nd semester 2014-15) in Unbabel and Microsoft Language Development Center.

Miguel Nuno Dias Alves Pupo Correia

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Research Areas and Interests
Miguel Correia is a researcher at INESC-ID in the Distributed Systems Group (GSD). He has been involved in several international and national research projects related to intrusion tolerance and security, including the SafeCloud, PCAS, TCLOUDS, ReSIST, CRUTIAL, and MAFTIA European projects. He has more than 100 international publications and is Senior Member of the IEEE. His main research interests are: cyber-security, cloud computing, software security, big data analytics for security, critical infrastructure protection, distributed systems, machine learning for security, intrusion tolerance.

Academic Info and Highlights
Miguel Correia usually teaches courses in cyber-security. He is currently the coordinator of the Master Degree (MSc) in Information Systems and Computer Engineering.

Maria dos Remédios Vaz Pereira Lopes Cravo

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Research Areas and Interests
Maria dos Remédios Cravo's research interests are in artificial intelligence, namely reasoning, belief revision and planning.

Academic Info and Highlights
Maria dos Remédios Cravo currently teaches the courses Fundamentals of Programming and Logic for Programming.

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Research Areas and Interests
Associate researcher at INESC-ID. Research areas in the field of next generation broadband services and networks, with particular focus on multimedia streaming with quality adaptation, QoS, QoE and services management.

Academic Info and Highlights
Senior Member of IEEE, served since 2002 in positions of vice-chair and chair of the IEEE Portugal Section. In 2015-2016 he is member of the IEEE Region 8 N&A Sub-Committee. "Excellence in Teaching at IST" award recipient 2015. Member of the program/scientific committee for the following conferences: 8th Iberian Conference on Information Systems and Technologies, 2015 International Conference on Future Networks Systems and Security, Fifth International Conference on Communication Systems and Network Technologies. Member of the reviewer committee for the following magazines: Multimedia Tools and Applications, IEEE Transactions on Multimedia, IEEE Communications Magazine, Multimedia Systems, Computer Communications. Classes: Services Engineering, IT Infrastructure Management and Administration, Independent Studies.

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Research Areas and Interests
Sensing and information in smart cities, technology transfer and technology based entrepreneurship.

Academic Info and Highlights
Chairman of the General Meeting of the Portuguese Association of Science and Technology Parks (TecParques). Classes: Introduction to Computer Architecture, Operating Systems (BSc in Computer Science and Engineering), Ambient Intelligence (MSc in Computer Science and Engineering and MSc in Energy Engineering and Management).

José Carlos Martins Delgado

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Research Areas and Interests
Distributed interoperability, distributed programming; distributed computing platforms; service based systems, model theoretic semantics.

Academic Info and Highlights
Member of the program committee for the following conferences: IEEE 9th MESOCA (2015); ISTA (2015); 6th EUSPN (2015); 4th ISI (2016); IEEE 10th MESOCA (2016); 2nd ISTA (2016). Member of the reviewer committee for the following magazines: National Academy Science Letters; Journal of Systems and Software. Courses lectured: Introduction to Computer Architecture; IT Infrastructure Management and Administration.

João Miguel de Sousa de Assis Dias

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Research Areas and Interests
João Dias is a researcher at INESC-ID. In his research, he is interested in developing and studying cognitive, emotional and social agents, and is currently exploring the use of emotional intelligence skills in agents to establish social relations with others in interactive scenarios. He obtained his Doctoral degree in Computer Science in January 2013, and participated in the EU-funded projects VICTEC, eCircus, LIREC and eCute. He has (co)authored about 30 peer-reviewed publications in international journals, conferences and books.

Academic Info and Highlights
João Dias teaches the courses Introduction to Programming, Artificial Intelligence, Logic Programing, and Autonomous Agents and Multi-Agent Systems. He also created the master's course on Artificial Intelligence for Games. He was part of the organizing committee of the workshop on Affective Agents held at IVA in 2014. Recipient of multiple "Excellence in Teaching" awards at IST.

Maria Inês Camarate de Campos Lynce Faria

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Research Areas and Interests
Ines Lynce's research is focused on modeling and solving hard combinatorial problems using constraint solving and optimization techniques. Examples of these problems include software package upgradeability, biological networks, phylogenetic trees and crew scheduling.

Academic Info and Highlights
Member of the editorial board of the Journal of Artificial Intelligence Research. Co-organizer of the SAT/SMT/AR Summer School 2016. Invited speaker at the ECCAI Summer School 2015. Program committee member of SAT, CP, AAAI and IJCAI. Coordinator of the Bologna Degree in Information Systems and Computer Engineering (LEIC) at the Alameda campus. Recipient of the "Excellence in Teaching" award at IST.

Alfredo Manuel dos Santos Ferreira

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Research Areas and Interests
3D Shape Analysis and Retrieval. Natural User Interfaces. Virtual and Augmented Reality. Immersive Multi-sensory Environments. Human-Computer Interaction

Academic Info and Highlights
Alfredo Ferreira is an Assistant Professor at the Instituto Superior Técnico, University of Lisbon. He is also a researcher of the Visualization and Intelligent Multimodal Interfaces Group at INESC-ID Lisboa. He was involved in three EC funded projects and seven nationally funded projects. He was a member of the organizing committee of the INTERACT 2011 and Eurographics 2016 conferences. Alfredo Ferreira is member of ACM, IEEE and Eurographics.

Diogo Manuel Ribeiro Ferreira

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Research Areas and Interests
Process Mining, Systems Integration, Data Analysis, GPU Computing, Deep Learning

Academic Info and Highlights
Organizer of the 11th International Workshop on Business Process Intelligence. Author of the book "Enterprise Systems Integration: A Process-Oriented Approach".

Paulo Jorge Pires Ferreira

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Research Areas and Interests
Paulo Ferreira's research work covers the scientific research area of distributed systems, with emphasis on middleware, mobile and cloud computing, security, and operating systems

Academic Info and Highlights
He was awarded two Best Paper awards in a top-level ACM/IFIP/Usenix international conference and received the "Excellence in Teaching" award at IST for the courses Mobile Computing and Operating Systems. He is currently coordinator of the MSc degree in Telecommunications and Informatics Engineering (METI). He coordinates the H2020 European Project TRACE (www.h2020-trace.eu). He was one of the founders and board officers of EuroSys (ACM - European Chapter of the Special Interest Group on Operating Systems) and is currently member of the steering committee. He is also a senior member of ACM and IEEE.

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Research Areas and Interests
Applied Mathematics and Computer Science, with particular interests on algorithms and data structures, graphs, computer programming and applications on complex network mining, optimization and simulation, and computational biology.

Academic Info and Highlights
Researcher at INESC-ID. Responsible for the curricular unit on Advanced Algorithms (MEIC-A) and lecturer of Complex Networks (MEIC-A), Foundations of Programming (LEIC-T and LETI), and Introduction to Algorithms and Data Structures (LEIC-A). He has collaborated on several national and international research projects dealing with problems from computational biology, network mining and large data processing.

Ana Teresa Correia de Freitas

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Research Areas and Interests
Current research interests are centred in the areas of Bioinformatics, Metagenomics, Human genetics, Health Informatics, Algorithms and Data Mining. Current projects are focused on the areas of applications in genetics and medical diagnosis of cardiac diseases and metagenomics for oil and gas.

Academic Info and Highlights
Member of the Scientific Council at IST. Member (CFO) of the executive committee of the Computer Science and Engineering Department (DEI). Scientific Coordinator to the scientific area of Programming Methodology and Technology at DEI. Member of the scientific board of the MSc degree in Biomedical Engineering at IST. Member of the board of ELIXIR, representing Portugal (http://www.elixir-europe.org/). Senior researcher at the IDSS group from INESC-ID. CEO of HeartGenetics Genetics and Biotechnology SA, a spin-off of IST.
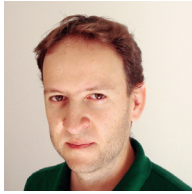
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Research Areas and Interests
Data cleaning, Data quality, Information extraction, ETL (Extraction, Transformation, Loading)

Academic Info and Highlights
Helena served in the Program Committee of: CBMS 2015 and 2016, EDBT 2016, QDB 2016, and as external reviewer of JDIQ 2015 and 2016. In 2015/16 , she taught four courses: i) Databases (BSc
 in Computer Science and Engineering), ii) Data Analysis and Integration and iii) Data Administration in Information Systems
 (both in MSc in Computer Science and Engineering), and iv) Data Quality (PhD in Computer Science and Engineering).

Sandra Pereira Gama

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Research Areas and Interests
Information Visualization, Human-Machine Interfaces

Academic Info and Highlights
Researcher at VIMMI (Visualization and Multimodal Interfaces) at INESC-ID

João Coelho Garcia

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Research Areas and Interests
Distributed Systems, Cloud Computing, Fault replication, Large scale computing

Academic Info and Highlights
Current Courses: Cloud Computing and Virtualization, Design and Implementation of Distributed Applications

Alberto Abad Gareta

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Research Areas and Interests
Prof. Alberto Abad research interests include general speech communication processing and modeling topics, such as robust speech recognition, speaker and language identification, computational paralinguistics, and health-care applications.

Academic Info and Highlights
Prof. Alberto Abad is an *assistant professor* at IST, since 2015, and senior researcher in INESC-ID since 2007. He obtained the Telecommunication Engineering degree in 2002 and the PhD in 2007 both from the Technical University of Catalonia (UPC), where he was also a lecturer. Since his arrival at INESC-ID, he has been Principal Investigator of the FCT funded project VITHEA and INESC-ID representative in the DIRHA European project, besides team member in several national and international projects, and team leader in several international technological evaluation challenges achieving excellent results. He has been lecturer in several DEI and DEEC courses.

Mário Rui Fonseca dos Santos Gomes

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displayPerson/8/15

Research Areas and Interests
Mário Rui Gomes is a senior research of GAIPS, Intelligent Agents & Synthetic
Characters Group at, INESC-ID. Current research interests are Usability, Massive Open Online Course, (MOOCs) and Geographic Information Systems (GIS).

Academic Info and Highlights
Mário Rui Gomes teaches Human-Computer Interaction (LEIC-T), Computer
Graphics (LEIC-T) and Usability and Information Systems (USI) (MISE, Master on Information and Business Systems, join master between DEI and Open
University).
From the last 30 years Mário Rui Gomes has been a very proactive member of
OE, GeoCompetivo Group at APDSI.He was founding member of CEI/OE, IFIP
WG5.10, GPCG, and APDSI.

Daniel Jorge Viegas Gonçalves

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Research Areas and Interests
Daniel Gonçalves is a researcher at the VIMMI (INESC-ID), in Information Visualization, personal information management and accessibility, studying how
to visualize personal information to provide users with insights on their lives.
He authored over 150 papers in peer-reviewed journals, conferences and books.

Academic Info and Highlights
He is a member of the scientific committee of MISE and in 2015 became Editorial Board Member of the Universal Access in the Information Society Journal
(Springer). He created an InfoVis course in MEIC and continues to research and
use novel pedagogical techniques, namely Gamification, to the Multimedia
Content Production course.

Joaquim Armando Pires Jorge

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Research Areas and Interests
Multimodal Interfaces, VR, Gamification

Academic Info and Highlights
Joaquim Jorge heads the Visualization and Multimodal Interfaces Group at IN-ESC-ID. He was PC Co-Chair of Eurographics 2016 & ACM IUI 2012 and is Editor-in-Chief of the Computers & Graphics Journal (Elsevier) since 2007. He is ACM
(2007-) and IEEE (2000-) Senior Member. A National Delegate to IFIP TC13 (Human Computer Interaction) 2000-2013, he received the IFIP Silver Core Award
in 2014. An ACM Distinguished Speaker since 2015, he is ACM/SIGGRAPH Specialized Conferences Committee Chair since 2014 and was elected to the ACM
Europe Council in 2015. He has published 45+ Journal and 150+ Conference papers. He is a Fellow of the Eurographics Association since 2010.

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Research Areas and Interests
Software engineering, particularly, clone detection and computer-aided design. Programming languages, particularly, languages for generative design.

Academic Info and Highlights
Studied Civil, Mechanical, Electrotechnical, and Software Engineering. His research interests include Artificial Intelligence, Programming Language Design
and Implementation, Software Reengineering, Computer-Aided Design, and
Generative Design. He has served as conference chair, conference organizer,
program committee member and reviewer of international and national conferences, and journal editor and reviewer. He is the Scientific Coordinator of
INESC-ID's Software Engineering Group. He currently teaches on Programming
Languages, Programming for Architecture, and Advanced Programming, and
is the principal developer of the Rosetta tool, a programming environment for
Generative Design.

João Manuel Brisson Lopes

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Research Areas and Interests
João Brisson's interests are interaction and user centred design, accessibility, visualization of scientic data, visualization and analysis of GPS based performance data and course planning, and interactive digital television.

Academic Info and Highlights
João Brisson is project evaluation expert in several science and technology development programmes. He participates as adivisor to projects on environmental protection preparedness and defences and projects on renewable energy. He currently teaches graduate courses on user centred design and undergraduate courses on computer graphics and human-computer interaction. João serves also as team captain of the Masters Ski Team Portugal.

Manuel Fernando Cabido Peres Lopes

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Research Areas and Interests
Manuel Lopes is an associated professor at Instituto Superior Tecnico and a senior researcher at INESC-ID and Inria. His main interest is the study of the fundamental mechanisms of learning in machines and animals, and its application to understanding exploration in animals, human-robot collaboration, autonomous robots and intelligent tutoring systems.

Academic Info and Highlights
Manuel Lopes is the coordinator of the european project Semi-Autonomous 3rd-Hand Robot and other international collaborations (Neurocuriosity). He is very active in multiple communities including artificial intelligence (AAAI, IJCAI), machine learning (NIPS, ICML), robotics (ICRA, IROS, RSS) and computational neuroscience, where he frequently serve as program committee member and organizes scientific workshops.

Sara Alexandra Cordeiro Madeira

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Research Areas and Interests
Sara C. Madeira is senior researcher at INESC-ID where she received the 2013 Young Researcher award. She is interested in algorithms, data science, bioinformatics and medical informatics. She is leading NEUROCLINOMICS2 - Unravelling Prognostic Markers in NEUROdegenerative diseases through CLINical and OMICS data integration, a project embracing the challenges of studying complex diseases and developing efficient/effective mining algorithms for biomedical data.

Academic Info and Highlights
Sara C. Madeira teaches undergraduate courses on programming, algorithms and data structures and graduate courses on computational biology and integrative bioinformatics. She co-chaired the 14th and 15th International Workshop on Data Mining in Bioinformatics held at ACM SIGKDD. In 2015 she was on sabbatical at University of Bologna and was EURIAS Junior Fellow.

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Research Areas and Interests
Nuno Mamede is member of the Spoken Language Systems Laboratory at INESC-ID. His main research interests are in natural language processing, namely syntactic and semantic analysis of Portuguese texts, tutoring systems to support the teaching of Portuguese for either native or foreign speakers, and data anonymization.

Academic Info and Highlights
Nuno Mamede received, in the last 4 years, the "Excellence in Teaching" award at IST for the course Natural Language Processing. He is currently coordinator of the BSc degree in Computer Science and Engineering – Taguspark.

Vasco Miguel Gomes Nunes Manquinho

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Research Areas and Interests
Vasco Manquinho is a senior researcher at the Software Algorithms and Tools for Constraint Optimization (SAT) group at INESC-ID. His main research interest has been on developing new models and algorithms for constraint optimization with application in areas such as bioinformatics and software management, among others. He has co-developed software tools that are used worldwide and define the state of the art in Boolean optimization, having won several tracks in international competitions.

Academic Info and Highlights
He has been responsible for the curricular unit of Analysis and Synthesis of Algorithms (LEIC-A) and co-responsible of Algorithms for Computational Logic (MEIC-A). Received the excellence in teaching distinction in 2015.
Member of the executive committee of the Computer Science and Engineering Department from 2011 until 2015. He is currently director of INESC-ID.

José Manuel da Costa Alves Marques

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Research Areas and Interests
José Alves Marques' scientific interests over the years have been on IT enabling platforms, namely operating systems, distributed systems, computer architecture and software integration. His current area of interest relates to the Internet of Things, and on the IT architectures for integration in large organizations. Within the Link's companies, several R&D projects have also been proposed and developed in topics related to electronic payments, electronic ticketing, test automation and enterprise architecture.

Academic Info and Highlights
Vice-president for the undergraduate studies and the master degree courses of the Department. Responsible for the courses Distributed Systems and Enterprise Integration. Responsible for the CIO@IST program.

Carlos António Roque Martinho

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Research Areas and Interests
Carlos Martinho is Senior Researcher of GAIPS at INESC-ID. His research focuses on applying artificial intelligence, in particular affective computing, to support the creative development process of digital games, and enhance user experience through believable interaction with synthetic characters.

Academic Info and Highlights
He has co-authored over 100 scientific papers on these subjects, the book "Design e Desenvolvimento de Jogos", participated in more than a dozen international research projects, and acts as reviewer for the main international journals and conferences in the field. At IST, he lectures on games and experience design, artificial life and computer graphics, and received several excellence awards for his teaching.

Bruno Emanuel da Graça Martins

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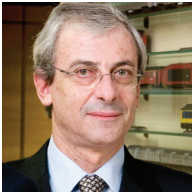**Research Areas and Interests**
Bruno Martins is a researcher at the Information and Decision Support Systems Lab of INESC-ID. His main research interests relate to handling geographic aspects in connection to supporting the access, processing, and retrieval of textual information.

Academic Info and Highlights
Bruno is a member of the information systems area of DEI/IST, and he teaches courses related to information management. He has extensive reviewing experience (e.g. in 2016 he was PC member for conferences like SIGSPATIAL, CIKM or EMNLP). He was one of the local organizers for EMNLP'15 and, in 2016, he was one of the co-organizers of the Lisbon Machine Learning School (LxMLS).

João Emílio Segurado Pavão Martins

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Research Areas and Interests
Knowledge Representation and Reasoning, Belief Revision

Academic Info and Highlights
Senior Member of the Association for the Advancement of Artificial Intelligence. Up to 2015, João Pavão Martins has served as vice president of the Department of Computer Science and Engineering (DEI) with the responsibility of undergraduate and master's education.

Ana Gualdina Almeida Matos

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Research Areas and Interests
Interested in language based security, in particular the application of type systems and other program analysis techniques to securing properties in concurrent, distributed and mobile settings. Current research focuses on client-side Web security and data-centric concurrency control.

Academic Info and Highlights
Researcher in the Security and Quantum Information Group of Instituto de Telecomunicações. Member of the FCT-funded project Elven Expressive Logics for VErifying the Net.
Coordinating the MSc course Software Security. Lecturing the BSc courses Foundations of Programming, Introduction to Algorithms and Data Structures and Analysis and Synthesis of Algorithms.

David Martins de Matos

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Research Areas and Interests
Computational music processing, Computational creativity, Automatic summarization, Automatic natural language generation, Dialog systems, Natural language semantics, Lexicography.

Academic Info and Highlights
David Martins de Matos has been teaching at IST since 1993 (programming, compilers, distributed systems, natural language processing, among others). He has been a researcher since 1988, at INESC (1988-2000), at IST (1997-2001), and at INESC-ID's Spoken Language Systems Lab (2001-present). He has been active in academic and industrial (banking, telecommunications, risk analysis) projects, both national and international. He is a senior member of the ACM (SIGMM, SIGIR) and of the IEEE (Signal Processing Society, Robotics and Automation Society, Computer Society). He is also a member of the Order of Portuguese Engineers.

Francisco António Chaves Saraiva de Melo

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Research Areas and Interests
Machine learning (reinforcement learning, active learning); applications of machine learning in robotics.

Academic Info and Highlights
Francisco S. Melo is an assistant Professor at Instituto Superior Técnico, University of Lisbon, and a researcher in the GAIPS group of INESC-ID. He received his PhD in Electrical and Computer Engineering at Instituto Superior Técnico in 2007. He held previous appointments with Carnegie Mellon University, in the USA, and the Institute for Systems and Robotics, in Lisbon. He participated in several national and international projects, such as RESCUE, CONTACT, LANdroids, LIREC, EMOTE, MAIS+S and INSIDE.

Carlos Manuel Martins Mendes

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Research Areas and Interests
Carlos is interested in two main areas; enterprise engineering, and service innovation. With regards to the first one, most of the current modeling techniques are limited in terms of the model acquisition process. The acquisition process is mostly manual, usually supported by interviews, surveys, and document analysis. This type of acquisition is time-consuming and requires effort, making it impossible to reflect organizational changes as soon as they take place. In this area, He believes that a workflow engine based on Enterprise Ontology theory could contribute to the state of art. Regarding the second research area (service innovation), despite the contributions to this discipline, there is still the need for further development. He believes that enterprise-engineering principles could be applied to better understand value creation in multi-actor, network, and collaborative contexts.

Academic Info and Highlights
Carlos Mendes is an Invited *Assistant Professor* at Instituto Superior Técnico, here he concluded his PhD in 2013. His PhD thesis focused on the gap between customers' expectations and perceived service and he proposed to solve it using dynamic Service Level Agreements negotiation.

José Carlos Alves Pereira Monteiro

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Research Areas and Interests
José Monteiro is a senior researcher at INESC-ID. His research interests are in the area of computer architectures, namely, parallel computing, compilers, embedded systems, and design automation for digital systems.

Academic Info and Highlights
Director of INESC-ID 2008-2015. Chair of the D.12 Topic of the IEEE/ACM Design, Automation and Test in Europe (DATE) for 2014 and 2015. Member of the steering committee of the International Symposium Power and Timing Modeling, Optimization and Simulation (PATMOS) since 2008.

Pedro Tiago Gonçalves Monteiro

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Research Areas and Interests
Pedro T. Monteiro is a researcher at INESC-ID and the recipient of a FCT research starting grant. His research interests are related to the analysis and validation of discrete systems applied to systems biology.

Academic Info and Highlights
Pedro T. Monteiro taught courses on Compilers. He is a member of the INForum2016 program committee (Bioinformatics track). He belongs to the Consortium for Logical Models and Tools (http://CoLoMoTo.org). He is responsible for the maintenance of the http://yeastract.com information system. He leads a national research project on semi-automatic revision of genetic regulatory networks (funded by FCT).

Ernesto José Marques Morgado

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Research Areas and Interests
Artificial intelligence, search and optimisation, planning and scheduling, abstract data types.

Academic Info and Highlights
Responsible and lecturer for the course Artificial Intelligence at LEIC-A. Responsible and lecturer for the course Search and Planning at MEIC-A and MEIC-T. Chair of exam committee of master's thesis defences at MEIC-A and MEIC-T.
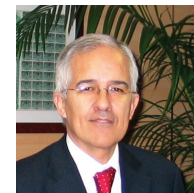
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Research Areas and Interests
Image processing, Machine learning, Deep learning, Pattern recognition, Computer Vision

Academic Info and Highlights
Jacinto lectures the following courses: Person-Machine Interface, Graphics Computation and Interactive Visual Communication

Hugo Miguel Aleixo Albuquerque Nicolau

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Research Areas and Interests
Hugo Nicolau is a researcher at the Visualization and Intelligent Multimodal Interfaces group at INESC-ID. His research interests include human-computer interaction and accessibility within the field of mobile and wearable computing. He focuses on the design, development, and evaluation of novel interaction techniques for people with disabilities, either induced by mobile context or health factors.

Academic Info and Highlights
In the past two years, Hugo Nicolau received two best paper awards at top-level venues (ACM CHI and ACM ITS). He was the local chair of the ACM SIGACCESS conference on computers and accessibility. Hugo is a member of program committees of scientific events, such as ACM ASSETS and W4A. He currently serves as newsletter editor for the ACM Special Interest Group on Accessible Computing. Member of ACM, SIGCHI, and SIGACCESS.

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Research Areas and Interests
Renato Nunes' research interests are in the areas of intelligent buildings, home automation, smart homes and ambient intelligence. He is especially interested in the areas of energy management and support mechanisms for the elderly to allow "aging in place".

Academic Info and Highlights
Renato Nunes is responsible and lecturer for the course Ambient Intelligence at MEIC and the course Devices and Networks for Logistics at MEGI.
Recently Renato Nunes participated in two European projects: WSAN4CIP - Wireless Sensor and Actuator Networks for the Protection of Critical Infrastructures, and Bank4Elder financed by the Ambient Assisted Living joint program. Currently he is the IST responsible for the H2020 project ALHTOUR - Assisted Living Technologies for the Health Tourism Sector.

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Research Areas and Interests
Algorithms and Complexity, Machine Learning, Computational Biology, Neurosciences

Academic Info and Highlights
Arlindo Oliveira is a researcher in the Information and Decision Support Systems of INESC-ID. He is currently the President of IST and the Head of the Portuguese Node of ELIXIR, the European Infrastructure for Bioinformatics.

Ana Maria Severino de Almeida e Paiva

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Research Areas and Interests
Prof. Ana Paiva works in the area of Artificial Intelligence, Autonomous Agents and Multi-agent Systems, Affective Computing and Social Robotics.

Academic Info and Highlights
Ana Paiva served as a member of numerous international conferences and workshops. In 2016 she was Program Committee co-chair of the Human- Robot Interaction conference. She is also PI of several national and international projects. In 2015/2016 was a member of the Global Agenda Council on Artificial Intelligence and Robotics of the World Economic Forum. In the Department she is also the coordinator of the Doctoral Program in the Department.

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Research Areas and Interests
Miguel Pardal is a researcher at INESC-ID in the Distributed Systems Group (GSD). He is currently participating in the Safe Cloud EU Project (H2020). He has more than 30 publications. His main research interests are: Cyber-Security, Internet of Things, Cloud Computing, Distributed Systems, and Enterprise Systems.

Academic Info and Highlights
Miguel Pardal teaches 'Computer and Network Security' and 'Distributed Systems' courses for graduates and undergraduates, respectively. He is a member of IEEE, ACM, and Ordem dos Engenheiros.

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Research Areas and Interests
João Dias Pereira is a researcher of the Software Engineering group at INESC-ID. His general research areas and interests include algorithms and software engineering. His primary research interests lie in matching algorithms for publish and subscribe systems and software testing.

Academic Info and Highlights
Responsible and lecturer for the course Object Oriented Programming at LEIC-T. Responsible and lecturer for the course Software Testing and Validation at MEIC-A

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Research Areas and Interests
João Madeiras Pereira is a professor of the Computer Graphics and Multimedia scientific area. He coordinates the Visualization and Simulation action line of the Visualization and Intelligent Multimodal Interfaces (VIMMI) research group at INESC-ID (Computer Systems Engineering Institute). His main research fields are real-time rendering, high-performance graphics, serious games and augmented reality. He is author or co-author of over 120 papers published in peer-reviewed international conferences and publications

Academic Info and Highlights
Member of the Scientific Committee of MEIC-A. Associate editor of the Journal of Real-Time Image Processing, Springer. He is affiliated with ACM /SIGGRAPH since 2012, IEEE Computer Society (senior member since 2014). He was a member of both Organizing Committee and International Program Committee of the Eurographics 2016 Conference. He teaches the graduate courses 3D Animation and Visualization, and 3D Programming.
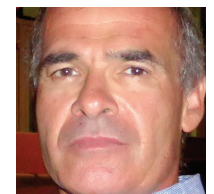
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Research Areas and Interests
Researcher at INESC-ID. Current research interests include peer-to-peer, Qos and network management, sensor networks, indoor location, building automation systems.

Academic Info and Highlights
Leads INESC-ID's participation in the H2020 funded project reTHINK. Member of the TPC of SAC-CN 2016, ICOIN 2016 and IJDSN. Responsible for the Computer Networks BSc level course. Senior Member of the IEEE since June 2015.

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Research Areas and Interests
Researcher at INOV INESC Inovação. Promoter of applied research methodologies. Study of situation awareness environments and information sharing platforms for critical info-structures. Study of techniques and models related to data analytics.

Academic Info and Highlights
Participation as coordinator or as a project team member on national and international projects. Active participation as work-package and task leader in research projects from PT2020 and H2020 funding programs (e.g., TRILLION, ROCSAFE). Active@Work – international R&D project funded by the Ambient Assisted Living Joint Programme. Design of solutions with innovative approaches addressing end-user information needs for the implementation of business intelligent systems.

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Research Areas and Interests
Network analysis, computational creativity, ontology engineering, semantic web, big data, knowledge representation&reasoning, knowledge engineering&management. She participated in several nationally-funded research projects on social network analysis and big data,ex. DataStorm.

Academic Info and Highlights
She was Chair of STAIRS 2016. She was Tutorial Chair at ESWC 2016. She was a PC Member for ESWC and EKAW. She has served as project proposal evaluator for the European Commission. She is responsible for the Partnership between MAYS and IST. She taught Knowledge Representation&Reasoning, Logic for Programming, Ontology Engineering for the Semantic Web, Knowledge Management&Knowledge Engineering.

João Pedro Marques Pombinho

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Research Areas and Interests
João Pombinho actively researches enterprise engineering and value-oriented systems design. His academic interests also include value modelling, enterprise architecture and enterprise transformation. João is a practitioner in the IT industry since 2005 and conducts applied research in IT demand management, portfolio and benefits management. He is currently Head of IT Demand Management at NOS Comunicações.

Academic Info and Highlights
Since 2012 João has lectured POSI post-graduation courses and delivered invited lectures to doctoral students on the subjects of value management and enterprise engineering. In 2016, João has joined the Department and currently teaches organizational engineering and systems analysis and modeling.
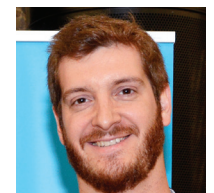
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Research Areas and Interests
Rui Prada works in Human-Agent Interaction and User Experience Design. In particular, he develops research on Computational Models of Social Intelligence, Virtual Characters and Applied Games.

Academic Info and Highlights
Rui Prada is the PI at INESC-ID of the H2020 research project RAGE and participates in research project LAW-TRAIN. He served as Associate Editor in the International Journal of Serious Games and was Program Chair of the Game Technology Track of the DiGRA/FDG 2016 conference. He is president of the Socie¬dade Portuguesa de Ciências dos Videojogos and coordinator of the Memorandum of Un¬derstanding between INESC-ID and NII in Tokyo. He became Senior Member of IEEE in 2015.

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Research Areas and Interests
Luís Rodrigues works in the area of fault-tolerant distributed systems. He is currently interested in concurrency, replicated data management, cloud computing, dynamic networks, information dissemination, and autonomic computing.

Academic Info and Highlights
Luís Rodrigues serves as chair of the board of directors of INESC-ID Lisboa. He is a member of the Scientific Council of IST. In cooperation with Prof. Luís Veiga, he serves as the IST coordinator for the Erasmus Mundus European Master's in Distributed Computing and the Erasmus Mundus Joint Doctorate in Distributed Computing. With Prof. João Silva he coordinates the European project PCAS.

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Research Areas and Interests
Computer systems, distributed systems.

Academic Info and Highlights
Program co-chair of the Eleventh European Conference on Computer Systems (EuroSys 2016).
ERC Starting Grant (2012-2017).

Paolo Romano

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Research Areas and Interests
Paolo Romano is a senior researcher at INESC-ID and a member of the Distributed Systems group. His research interests include distributed data management in cloud computing platforms, autonomic computing, programming paradigms for parallel/distributed computing, energy efficiency and performance modelling of complex computing infrastructures.

Academic Info and Highlights
Paolo Romano currently lectures courses in the area of dependable distributed programming. He has been serving as Program Committee Chair for several international workshops in the area of concurrent programming (Transact, WTTM) and as Program Committee member for a number of international conferences in the distributed computing and big data domain (including ICDCS, BigData, MASCOTS and CloudCom).
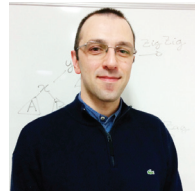
Luís Manuel Silveira Russo

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Research Areas and Interests
Luís Russo is an *assistant professor* at the CSE Dept, IST, Univ of Lisbon. His current interests include the design and analysis of data structures and algorithms for string matching problems. He is mainly interested in succinct and compressed structures, which can be used to handle large volumes of data. His initial research focused on compressed indexed, using Lempel-Ziv data compression. He has also worked on compressed suffix tree representations. He also has a healthy interest in using the SSE instruction set to optimize algorithmic performance of his implementations.

Academic Info and Highlights
LuÃ¬s M. S. Russo currently lectures courses on the analysis of algorithms and string processing with applications to bio-informatics.

Francisco João Duarte Cordeiro Correia dos Santos

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Research Areas and Interests
Research interests include the development of computational models at the interface between ecology and economics, addressing problems related with cultural evolution, cooperation, urban planning, and governance of the global commons.

Academic Info and Highlights
Associate editor of 3 scientific journals, and responsible for the area of Programming Technology and Methodology at IST. Teaches courses on algorithms, programming, and network science, for which he has received several "IST Excellence in Teaching" awards. Recipient of the "Univ. de Lisboa/Caixa Geral de Depósitos 2016" award in Computer Science & Engineering.

Nuno Miguel Carvalho dos Santos

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Research Areas and Interests
Nuno Santos carries out his research in the Distributed Systems group at INESC-ID Lisbon. His research focuses on security and trust computer systems in the areas of cloud computing and mobile devices. He has built several systems aimed at improving trust in the cloud, enterprise, and mobile platforms by leveraging trusted computing hardware, namely TPMs and ARM TrustZone.

Academic Info and Highlights
Teaching 2015-2016: Mobile Computing, Architectures for Embedded Computing, Computer Organization, Forensic Cybersecurity.

Pedro Manuel Guerra e Silva Reis dos Santos

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Research Areas and Interests
Stochastic simulation and construction and validation of simulation metamodels. Compilers and language compilation, interpretation, simulation and runtime support.

Academic Info and Highlights
Pedro Reis dos Santos currently lectures courses on Software Engineering and Object-Oriented Programming.

José Alberto Rodrigues Pereira Sardinha

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Research Areas and Interests
José Alberto R. P. Sardinha is an *assistant professor* (DEI - IST) and a senior researcher at INESC-ID. Prof. Sardinha's research interests include the elds of automated trading agents, multi-agent systems, machine learning, agent-oriented software engineering and automated software engineering.

Academic Info and Highlights
Prof. Sardinha is a senior researcher of the INSIDE research project, funded under the Carnegie Mellon|Portugal program, which investigates the use of robotic technology for therapeutic purposes.

Pedro Daniel Barbosa Sequeira

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Research Areas and Interests
Artificial Intelligence; Reinforcement Learning; Intrinsic Motivation; Multiagent Systems.

Academic Info and Highlights
Has been a post-doc since 2013 at GAIPS / INESC-ID after completing a PhD in information Systems and Computer Engineering at IST supervised by Ana Paiva and Francisco Melo. His thesis focused on building flexible and robust reward mechanisms for RL agents. His interests include adaptive agents, learning and evolutionary mechanisms, and his approach has been inspired by biological mechanisms. He has participated in INSIDE (CMU-Pt), EMOTE (FP7), E-Circus (FP6) and CoWriter (EPFL-IST) projects and given classes for the Autonomous Agents and Multiagent Systems, Human-Computer Interaction and Computer Graphics courses at IST.

Alberto Manuel Rodrigues da Silva

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Research Areas and Interests
Alberto Silva is senior researcher at INESC-ID. His main academic and research interests are in the areas of information systems, software engineering, model-driven engineering, requirement engineering, social computing and project management, with multidisciplinary application domains.

Academic Info and Highlights
Teaches IT Project Management, and Systems Analysis and Modeling. Track co-chair of the QUATIC 2016 International Conference. PC Member of several international conferences. Coordinator of the RSLingo and MDDLingo initiatives available at GitHub, Coordinator of the RSLingo4Privacy, TT-MDE-Mindbury and dDocs projects.

António Manuel Ferreira Rito da Silva

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Research Areas and Interests
Member of INESC-ID's Software Engineering group. His research interest focuses on social software engineering and business process management, namely, software development process as a social construct and software tools as social enablers, capture of end-users tacit knowledge using non-intrusive methods and tools, and integration of activity-based and goal-based approaches to business process modelling and execution.

Academic Info and Highlights
Teaches the Software Engineering and Software Architecture courses. Member of the No Problem Has a Solution FCT-funded project where he is responsible for the software architecture of the collaborative digital archive of Fernando Pessoa's Book of Disquiet and actively contributes to its code base.

Luís Jorge Brás Monteiro Guerra e Silva

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Research Areas and Interests
Luís Guerra e Silva is a senior researcher at the Algorithms for Optimization and Simulation (ALGOS) group at INESC-ID. His research interests are mainly focused on the design of efficient algorithms and data structures for applications in hardware and software verification, particularly in the field of electronic design automation. Recently, he also developed an interest in software engineering and enterprise information systems.

Academic Info and Highlights
Luís Guerra e Silva is vice-president of IST for Information and Communication Technologies, where he leads the Network and Computer Services division. He teaches courses on programming, algorithms and software verification.

Mário Jorge Costa Gaspar da Silva

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Research Areas and Interests
Mário J. Gaspar da Silva a senior researcher at INESC-ID. His research interests span intelligent information systems and digital libraries, including information access methods, heterogeneous data integration (mainly web, biomedical and geographic data), information retrieval and text mining.

Academic Info and Highlights
Mário J. Gaspar da Silva coordinates the Research Line of Excellency in Large-Scale Data Management (DataStorm) and the Campus Segment of EIT Heath at IST and Universidade de Lisboa.

Miguel Leitão Bignolas Mira da Silva

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Research Areas and Interests
Digital transformation, enterprise architectures, and IT governance.

Academic Info and Highlights
Responsible for several courses (including online) about information systems. Invited professor at FEUP. Several "Excellence in Teaching" awards. Coordinator of the Master in Information and Enterprise Systems (MISE) a new online master degree. Leader of the Digital Transformation research group at INOV INESC Inovação with 300K€ average yearly revenue. Published more than 150 scientific papers in international journals and conferences. Supervised five PhD theses and more than 100 master theses. Member of ACM, IEEE, and AIS.

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Research Areas and Interests
Enterprise Architecture

Academic Info and Highlights
Responsible for new courses such as "Enterprise Architecture" and "Engineering and Technology Business Process. Regarding the market, I´ve done professional services in SW Engineering to Information Systems Architecture (ISA) in major companies as for example:
•Brazil: Votorantim Bank, Petrobras, Caixa Seguros, Serasa Experience.
•Germany: Schufa,
•Luxembug: European Investment Bank, European Investment Fund
•Portugal: EDP, SonaeMCH, Otimus, , University Hospitals of Coimbra, Fidelidade, Portugal Telecom, CGD, BPI, ESI,
I´ve also responsible for the development of the Enterprise Architecture EAMS tool (www.linkconsulting.com/eams).

José Manuel Nunes Salvador Tribolet

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Research Areas and Interests
José Tribolet is senior researcher at the Information Systems group at INESC-ID. His main academic interests are in the areas of enterprise architecture, engineering, governance, and transformation, with emphasis on the role played by enterprise information systems.

Academic Info and Highlights
President of the Department of Computer Science and Engineering (DEI).
President of INESC - Institute for Systems and Computers Engineering.
Promoter of the Centre for Organizational Design & Engineering at INESC-IN-OV. Coordinator of POSI-E3, the P/P/G professional postgraduate course on Sofwtare and Information Systems Engineering of IST (3rd degree Bologna diploma).

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Research Areas and Interests
Research activities have focused in the area of Enterprise Architectures and Information Systems, particularly:
-Representation, Modelling and Survey of Architectures of information systems, including through the definition and development of its own framework Architectures modeling of information systems, formalized by a UML profile;
-Architectures and Information Systems Evaluation, with the metrics specification and architectural qualities.

Academic Info and Highlights
André Vasconcelos has developed his academic activities within the DEI. He taught 24 courses and was regent of 7 of these chairs.
In terms of research, he participated in 10 projects, mentored 45 master's degrees and doctorates 3, developed 30 presentations by invitation and 73 publications.

Luís Manuel Antunes Veiga

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Research Areas and Interests
Luís Veiga, Senior Researcher at INESC-ID, Group Manager of Distributed Systems Group, Vice-Coordinator of Computng Systems and Computing Networks Laboratory. His research interests: distributed systems, virtual machines, cloud and grid computing, data management and processing, peer-to-peer systems, mobile middleware.

Academic Info and Highlights
Local Coordinator of FP7 CloudForEurope project, participant in FP7 Timbus project on digital preservation and virtualization. He led 2 National research projects on P2P cycle-sharing and virtualization, and locally 2 on distributed virtual machines and multicore programming. Member of Scientific Board of EM European Msc and Joint PhD in Distributed Computing, MSc in Telecommunications and Informatics Engineering. Best Researcher Award Nominee at INESC-ID Prize 2015. Program Committee Chair, 7° Simpósio de Informática (INFORUM 2015). Workshop Chair, 5th International Workshop on Cloud Data and Platforms (CloudDP'15), colocated with ACM EuroSys 2015.
Guest Editor, Special Issue on New Trends in Computational Science and Engineering, Journal of Computational Science, Elsevier. Chair, IEEE Computer Society Chapter, Section Portugal, 2015.

Andreas Mirolaus Wichert

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Research Areas and Interests
Artificial intelligence, neuronal networks, cognitive systems, brain imaging, hierarchical indexing structures, quantum computation.

Academic Info and Highlights
Published one international book 2015 and six journals. Excellence result in teaching for Decision Support Systems 14/15 and Intelligent Multimedia Databases 14/15.
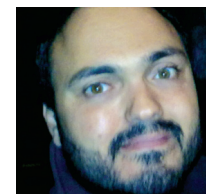
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Selected Publications

Abou-Jaoudé, W., Monteiro, P. T., Naldi, A., Grandclaudon, M., Soumelis, V., Chaoui-ya, C., & Thieffry, D. (2014). Model checking to assess T-helper cell plasticity. Frontiers in bioengineering and biotechnology, 2. doi: 10.1101/012641

Abou-Jaoudé, W., Traynard, P., Monteiro, P. T., Saez Rodriguez, J., Helikar, T., Thieffry, D., & Chaouiya, C. (2016). Logical modeling and dynamical analysis of cellular networks. Frontiers in Genetics, 7, 94. doi: 10.3389/fgene.2016.00094

Aksoy, L., Flores, P., & Monteiro, J. (2015). Exact and approximate algorithms for the filter design optimization problem. IEEE Transactions on Signal Processing, 63(1), 142-154. doi: 10.1109/tsp.2014.2366713

Aksoy, L., Flores, P., & Monteiro, J. (2016). A novel method for the approximation of multiplierless constant matrix vector multiplication. EURASIP Journal on Embedded Systems, 2016(1), 1-11. doi: 10.1109/euc.2015.27

Almeida, A., Carreira, M., Jorge, J., & Gonçalves, D. (2015, August). Contact Activity Visualization for Seniors. In International Conference on Augmented Cognition (pp. 709-721). Springer International Publishing. doi: 10.1007/978-3-319-20816-9_68

Almeida, I., Coheur, L., & Candeias, S. (2015). Coupling natural language processing and animation synthesis in portuguese sign language translation. Vision and Language. doi: 10.18653/v1/w15-2815

Almeida, I., Coheur, L., & Candeias, S. (2015, September). From european portuguese to portuguese sign language. In 6th Workshop on Speech and Language Processing for Assistive Technologies (SLPAT) (p. 140). doi: 10.18653/v1/w15-5124

Antunes, G., Borbinha, J., &Caetano, A. (2016, January). An Application of Semantic Techniques to the Analysis of Enterprise Architecture Models. In 2016 49th Hawaii International Conference on System Sciences (HICSS) (pp. 4536-4545). IEEE. doi: 10.1109/hicss.2016.564

Astudillo, R. F., Amir, S., Lin, W., Silva, M., & Trancoso, I. (2015). Learning Word Representations from Scarce and Noisy Data with Embedding Sub-spaces. Proceedings of the Association for Computational Linguistics (ACL), Beijing, China. doi: 10.3115/v1/p15-1104

Barata, G., Gama, S., Jorge, J., & Gonçalves, D. (2015). Gamification for smarter learning: tales from the trenches. Smart Learning Environments, 2(1), 1. doi: 10.1186/s40561-015-0017-8

Barrio, P., Simões, G., Galhardas, H., & Gravano, L. (2015). Learning to Rank Adaptively for Scalable Information Extraction. In EDBT (pp. 241-252).

Bittencourt, J. C., Resende, J. C., de Oliveira, W. L., & Chaves, R. (2015, August). CLE-FIA Implementation with Full Key Expansion. In Digital System Design (DSD), 2015 Euromicro Conference on (pp. 555-558). IEEE. doi: 10.1109/dsd.2015.55

Boyle, E. A., Hainey, T., Connolly, T. M., Gray, G., Earp, J., Ott, M., ... & Pereira, J. (2016). An update to the systematic literature review of empirical evidence of the impacts and outcomes of computer games and serious games. Computers & Education, 94, 178-192. doi: 10.1016/j.compedu.2015.11.003

Brito, D., Rabuske, T. G., Fernandes, J. R., Flores, P., & Monteiro, J. (2015). Quaternary Logic Lookup Table in Standard CMOS. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 23(2), 306-316. doi: 10.1109/tvlsi.2014.2308302

Bruno, R., Santos, N., & Ferreira, P. (2015, August). Termite: Emulation Testbed for Encounter Networks. In proceedings of the 12th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (pp. 31-40). doi: 10.4108/eai.22-7-2015.2260069

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Caetano, A., Antunes, G., Pombinho, J., Bakhshandeh, M., Granjo, J., Borbinha, J., & da Silva, M. M. (2016). Representation and analysis of enterprise models with semantic techniques: an application to ArchiMate, e3value and business model canvas. Knowledge and Information Systems, 1-32. doi: 10.1007/s10115-016-0933-0

Caetano, A., Antunes, G., Pombinho, J., Bakhshandeh, M., Granjo, J., Borbinha, J., & da Silva, M. M. (2016). Representation and analysis of enterprise models with semantic techniques: an application to ArchiMate, e3value and business model canvas. Knowledge and Information Systems, 1-32. doi: 10.1007/s10115-016-0933-0

Campos, J., Alves-Oliveira, P., & Paiva, A. (2016). Looking for Conflict: Gaze Dynamics in a Dyadic Mixed-Motive Game. Autonomous Agents and Multi-Agent Systems, 30(1), 112-135. doi: 10.1007/s10458-015-9282-8

Carreiro, A. V., Amaral, P. M., Pinto, S., Tomás, P., de Carvalho, M., & Madeira, S. C. (2015). Prognostic models based on patient snapshots and time windows: Predicting disease progression to assisted ventilation in Amyotrophic Lateral Sclerosis. Journal of biomedical informatics, 58, 133-144. doi: 10.1016/j.jbi.2015.09.021

Carreiro, A. V., Mendonça, A., de Carvalho, M., & Madeira, S. C. (2015). Integrative biomarker discovery in neurodegenerative diseases. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 7(6), 357-379. doi: 10.1002/wsbm.1310

Chaves, R., Di Natale, G., Batina, L., Bhasin, S., Ege, B., Fournaris, A., … & Sklavos, N. (2015, May). Challenges in designing trustworthy cryptographic co-processors. In 2015 IEEE International Symposium on Circuits and Systems (ISCAS) (pp. 2009-2012). IEEE. doi: 10.1109/iscas.2015.7169070

Clement, B., Roy, D., Oudeyer, P. Y., & Lopes, M. (2015). Multi-Armed Bandits for Intelligent Tutoring Systems. JEDM-Journal of Educational Data Mining, 7(2), 20-48.

Costa, Â., Ling, W., Luís, T., Correia, R., & Coheur, L. (2015). A linguistically motivated taxonomy for Machine Translation error analysis. Machine Translation, 29(2), 127-161. doi: 10.1007/s10590-015-9169-0

Costa, J., Gomes, L., Lopes, G. P., & Russo, L. M. (2015, April). Improving Bilingual Search Performance Using Compact Full-Text Indices. In International Conference on Intelligent Text Processing and Computational Linguistics (pp. 582-595). Springer International Publishing. doi: 10.1007/978-3-319-18111-0_44

Couceiro, M., Chandrasekara, G., Bravo, M., Hiltunen, M., Romano, P., & Rodrigues, L. (2015, November). Q-opt: Self-tuning quorum system for strongly consistent software defined storage. In Proceedings of the 16th Annual Middleware Conference (pp. 88-99). ACM. doi: 10.1145/2814576.2814809

Crespo, P. T., & Antunes, C. (2015). Predicting teamwork results from social network analysis. Expert Systems, 32(2), 312-325. doi: 10.1111/exsy.12038

Cruz, A., & Vasconcelos, A. (2015). A Reference Application Architecture for the CRM Domain: The Portuguese Citizen Space Case Study. International Journal of Enterprise Information Systems (IJEIS), 11(2), 24-49. doi: 10.4018/ijeis.2015040102

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de Sousa, L. M., & da Silva, A. R. (2016). A domain specific language for spatial simulation scenarios. GeoInformatica, 20(1), 117-149. doi: 10.1007/s10707-015-0233-y

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Diegues, N., & Romano, P. (2014, June). STI-BT: A scalable transactional index. In Distributed Computing Systems (ICDCS), 2014 IEEE 34th International Conference on (pp. 104-113). IEEE. doi: 10.1109/icdcs.2014.19

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Esteves, S., Ferreira, P., & Veiga, L. (2015). C3P: A Re-Configurable Framework to Design Cycle-sharing Computing Cloud Platforms. The Computer Journal. The British Computer Society. doi: 10.1093/comjnl/bxv012

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Ferreira, D. R., & Vasilyev, E. (2015). Using logical decision trees to discover the cause of process delays from event logs. Computers in Industry, 70, 194-207. doi: 10.1016/j.compind.2015.02.009

Ferreira, D. R., Carvalho, P. J., Fernandes, H., & Contributors, J. E. T. (2015). Robust regression with CUDA and its application to plasma reflectometry. Review of Scientific Instruments, 86(11), 113507. doi: 10.1063/1.4935882

Ferreira, J. C., de Almeida, J., & da Silva, A. R. (2015). The impact of driving styles on fuel consumption: a data-warehouse-and-data-mining-based discovery process. IEEE Transactions on Intelligent Transportation Systems, 16(5), 2653-2662. doi: 10.1109/tits.2015.2414663

Fialho, P., & Coheur, L. (2015, October). ChatWoz: chatting through a Wizard of Oz. In Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility (pp. 423-424). ACM.

Filipe, R., & Barreto, J. (2015). Nested Parallelism in Transactional Memory. In Transactional Memory. Foundations, Algorithms, Tools, and Applications (pp. 192-209). Springer International Publishing. doi: 10.1007/978-3-319-14720-8_9

Gorgulho, J., Preto, D., Páscoa, C., & Tribolet, J. (2015). Organizational Configuration Map, Taxonomy of BEING. Procedia Computer Science, 64, 521-528. doi: 10.1016/j.procs.2015.08.557

Gorgulho, J., Tavares, J., Páscoa, C., & Tribolet, J. (2015). Governance: Decision-making Model and Cycle. Procedia Computer Science, 64, 578-585. doi: 10.1016/j.procs.2015.08.569

Guerreiro, J., & Gonçalves, D. (2015, October). Faster Text-to-Speeches: Enhancing Blind People's Information Scanning with Faster Concurrent Speech. In Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility (pp. 3-11). ACM.

Guerreiro, J., & Gonçalves, D. (2016). Scanning for Digital Content: How Blind and Sighted People Perceive Concurrent Speech. ACM Transactions on Accessible Computing (TACCESS), 8(1), 2. doi: 10.1145/2822910

Guerreiro, J., Rodrigues, A., Montague, K., Guerreiro, T., Nicolau, H., & Gonçalves, D. (2015, April). TabLETS Get Physical: Non-Visual Text Entry on Tablet Devices. In Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (pp. 39-42). ACM. doi: 10.1145/2702123.2702373

Guerreiro, T., Montague, K., Guerreiro, J., Nunes, R., Nicolau, H., & Gonçalves, D. J. (2015, November). Blind People Interacting with Large Touch Surfaces: Strategies for One-handed and Two-handed Exploration. In Proceedings of the 2015 International Conference on Interactive Tabletops & Surfaces (pp. 25-34). ACM. doi: 10.1145/2817721.2817743

Han, T. A., Santos, F. C., Lenaerts, T., & Pereira, L. M. (2015). Synergy between intention recognition and commitments in cooperation dilemmas. Scientific reports, 5. doi: 10.1038/srep09312

Henriques, R., & Madeira, S. C. (2015). Biclustering with flexible plaid models to unravel interactions between biological processes. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 12(4), 738-752. doi: 10.1109/tcbb.2014.2388206

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