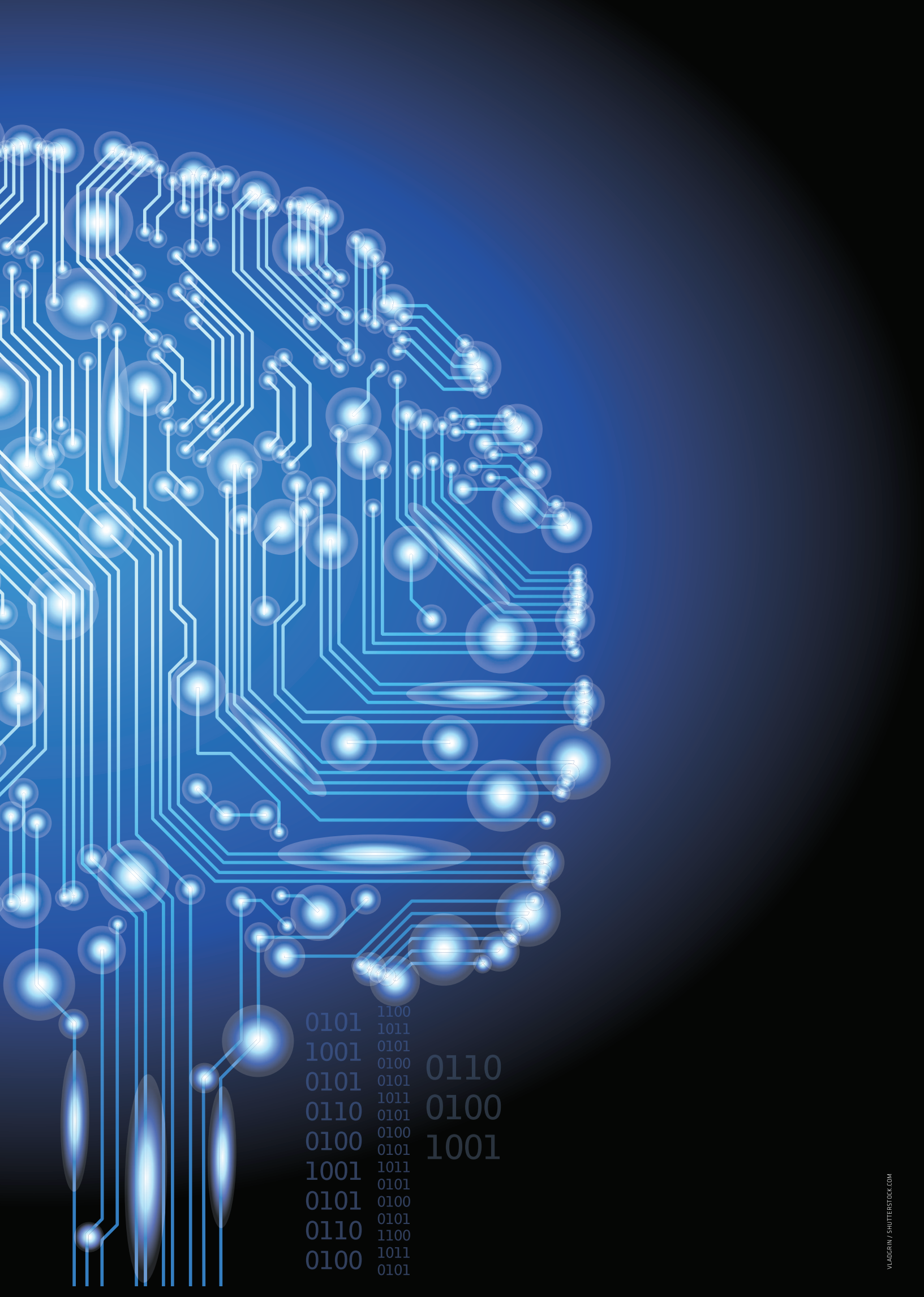




**DEPARTMENT
OF COMPUTER SCIENCE
AND ENGINEERING**

ANNUAL REPORT 2014





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1. **Welcome Letter**



The Department of Computer Science and Engineering (DEI – Departamento de Engenharia Informática) initiated 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 and postgraduate education. To achieve this goal, DEI supports activities in the research, development and innovation domains at the highest international level in intimate cooperation with the key Portuguese research and development (R&D) institutes and industries.

DEI's emergence as one of the larger IST departments was the planned result of a decade long strategic evolution of human capital, curricular contents and research activities conducted by the Departments of Electrical and Computer Engineering (DEEC – Departamento de Engenharia Electrotécnica e de Computadores) and the Department of Mechanical Engineering (DEM – Departamento de Engenharia Mecânica), in synergy with the Institute of Systems and Computer Engineering (INESC – Instituto de Engenharia de Sistemas e Com-

putadores), one of the key Portuguese research institutions and core member of IST's R&D ecosystem.

IST's first 5-year degree in computer science and engineering (LEIC - Licenciatura em Engenharia Informática e de Computadores), which launched in the academic year of 1989-90, provided a sound basis for recruitment for the new department, DEI, of its best graduates as teaching assistants, who simultaneously started their doctoral programs and became professors upon graduation. From an initial core of three dozen professors and teaching assistants, DEI has grown into a full staff of about 75 professors holding PhD degrees in CS&E from internationally as well as nationally reputed universities.

25 years have passed since the launching of LEIC and 15 years since the birth of DEI. What were once young, untried, bold initiatives are now solid, mature, core departmental realities.

This report provides substantiated views on the reality of DEI as it is today, and on its main activities and outcomes at IST and in society. Being the first time this report is issued, we are sure there are many aspects to correct, dimensions to complement, relevant activities to be better reported. However, in its actual format it already provides key elements that will help the community we serve, our country and society in general, to judge us and to help us through the feedback given, to improve the ways and the means used to fulfil our mission.

DEI, as a collective of professors, students and academic staff, aims to keep 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, constantly seeking new, bold, untried and crazy-enough initiatives that carve out a future which surely will bring a lot of changes.

At 65, I am very proud and feel immensely honoured to serve as DEI's department head. It was a privilege to have been one of its founding fathers indeed.

Lisbon, 16 December 2014

José Tribolet
President of DEI

1. DEI at IST

The Department of Computer Science and Engineering (DEI) was created during the academic year of 1997/98 and has been officially active since September 1998.

The emergence of DEI within IST was one of the main results of a strategic development plan that began in 1980 with a clear focus on developing teaching resources for the informatics and computer science fields. This plan was successfully conducted on the basis of an effective research and practical development policy, anchored in leading research institutes such as INESC.

DEI's main mission is to contribute to the development of society by promoting university teaching of excellence in the areas of computer science and engineering in both undergraduate and graduate levels.

DEI is responsible for and has been actively involved in the curricular evolution of IST's Bachelor of Science (BSc) and Master of Science (MSc) degrees in Computer Science and Engineering, maintaining alignment with ACM and IEEE curricular guidelines, the latest being the 2013 versions. In partnership with the Electrical and Computer Engineering Department, it is co-responsible for the BSc and MSc degrees in Telecommunications and Informatics Engineering.

DEI has more computer science and engineering degree-seeking students than any other institute in Portugal, acquiring skills in areas like architecture and operating systems, computer graphics and multimedia, artificial intelligence, programming methodology, and technology and information systems. The Department interacts intensely with other national and international universities to assure the highest standards of learning and research opportunities for its academic community.

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

3. Activities of DEI

Developed in 2014

Several main actions have been taken during 2014 to achieve the goals detailed in the Executive Commission program for the biennium 2013-2014. This program included the eight main objectives detailed below:

1. Improve students' success in the 1st cycle

- Creation of a monitoring platform of teaching activities
- Creation of a mechanism for monitoring student attendance
- Promotion of the usage of e-learning contents

2. Definition of new curriculum for LEIC and MEIC

- Development and approval of the restructuring of MEIC
- Successful conclusion of the evaluation of A3ES, involving all of DEI's teaching levels

3. Re-evaluation of DEI's offer at the level of PhD programs

- Approval of the new PhD program in Distributed Systems
- Participation in several national PhD programs in transversal areas
- Organisation of the "PhD day" event

4. Maintain the current level of quality of DEI's services

- Increase training opportunities for non-teaching staff
- Organisation of a trimestral meeting with all staff

5. Improve the Department's facilities

- Re-equipment of DEI's labs and teaching rooms, social gathering spaces, meeting rooms with multimedia support, as well as staff and student spaces
- Definition of a global project to improve indoor and outdoor infrastructures, in cooperation with the Department of Mechanics

6. Definition of task forces to engage all teaching staff in the Department's activities

- Creation of working groups: "Portal do DEI", "DEI Fenix" and "DEI Alive"
- Support of teachers' initiatives involving important student activities such as Hackerschool, Programming contests, Information Security contest

7. Increase the involvement of DEI in the University's organisational system

- Definition of regular meetings with the Scientific Council board of IST

- Proposal of regular meetings with the Pedagogical Council of IST
- Definition of a semestral meetings with all course's student representatives

8. Development of effective entrepreneurship actions

- 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 2015

- Maintain the monitoring platform of teaching activities
- Define a team for monitoring LEIC's results
- Define a team to support the transition of MEIC from the old to the new curriculum
- Maintain the "PhD day" event
- Seek to obtain financial support for the Department PhD programs in the diverse areas related to Computer Science and Engineering
- Attract funds for advanced professional teaching, from both European and national programs
- Develop training plans for staff
- Improve tools for management support
- Define a strong investment in indoor and outdoor spaces
- Maintain the development dynamics of "Portal do DEI" and "DEI Fenix"
- Develop events for attraction of pre-university students
- Create a trimestral newsletter of DEI
- Maintain the cycle of conferences CIO@IST

Long-term activities

- Launch a new set of academic initiatives, involving students and professors, centered on topics and activities that have great motivation potential and technical and societal impacts. These initiatives should aim to arouse and maintain self-sustained dynamics, provide effective means for professors and students to find alternative ways to learn and address real engineering problems, and actively support exchanges between the various national academies

- Analyse the choices of the students in terms of specialization areas particularly segmenting the interest of internal students, external students and international students. Reinforce the specialization areas that strategically can place the MSc Degree in Computer Science and Engineering as a reference master's in terms of Portuguese universities
- Develop the departmental capabilities for individual academic career guidance and support, encouraging its medium and long-term planning
- Analyse how to improve the selection of new faculty members in conjunction with the main research units of the Department
- Increase the visibility and recognition of the PhD programs of the Department attracting top national and international students
- Work in conjunction with the PhD programs to create research specializations offering an interesting follow-up for master's students



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4. Education

The Department of Computer Science and Engineering (DEI) is currently offering a bachelor's degree program (BSc), two master's degree programs (MSc) according to the Bologna Process, and one PhD program :

- BSc in Computer Science and Engineering (LEIC – Licenciatura em Engenharia Informática e de Computadores), offered at Alameda: (<https://fenix.tecnico.ulisboa.pt/cursos/leic-a>) and Taguspark: (<https://fenix.tecnico.ulisboa.pt/cursos/leic-t>)
- MSc in Computer Science and Engineering at Alameda (MEIC-A – Mestrado em Engenharia Informática e de Computadores Alameda): (<https://fenix.tecnico.ulisboa.pt/cursos/meic-a>)
- MSc in Computer Science and Engineering - Taguspark (MEIC-T – Mestrado em Engenharia Informática e de Computadores Taguspark): (<https://fenix.tecnico.ulisboa.pt/cursos/meic-t>)
- PhD program in Computer Science and Engineering (DEIC – Doutoral em Engenharia Informática e de Computadores): (<https://fenix.tecnico.ulisboa.pt/cursos/DEIC>)

In addition, DEI offers, jointly with the Department of Electrical and Computer Engineering (DEEC – Departamento de Engenharia Electrotécnica e de Computadores), a bachelor's degree program and a master's degree program according to the Bologna Process:

- BSc in Telecommunications and Informatics Engineering (LETI – Licenciatura Bolonha em Engenharia de Telecomunicações e Informática): (<https://fenix.tecnico.ulisboa.pt/cursos/lerc>)
- MSc in Telecommunications and Informatics Engineering (METI – Mestrado em Engenharia de Telecomunicações e Informática): (<https://fenix.tecnico.ulisboa.pt/cursos/merc>)

In addition, DEI offers, jointly with Universidade Aberta, a master's program according to the Bologna Process:

- MSc in Information and Enterprise Systems (MISE – Mestrado em Informação e Sistemas Empresariais): (<https://fenix.tecnico.ulisboa.pt/cursos/mise>)

DEI also participates in the coordination of the following programs:

- Erasmus Mundus master's program in Distributed Computing
- 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)

- Master's in Biomedical Engineering, offered by the Department of Bioengineering
- Lisbon University doctoral program in Integrative Neuroscience (NeuULisbon)
- International Neuroscience doctoral program, FCT PhD program (INDP)
- Doctorate in Bioengineering (MIT-Portugal Program)
- 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)
- Doctoral program in Digital Media (PDMD), Ref. PD/00105/2013

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>)

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

Bachelor's Degree in Computer Science and Engineering (LEIC)

(Coordinators: Prof. Miguel Correia (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, defence 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.

Master's Degree in Computer Science and Engineering – Alameda (MEIC-A)
(Coordinator: Prof. José Monteiro)

The experts holding an MSc degree in Computer Science and Engineering obtained at the IST campus in Alameda will be able to analyse, develop and implement complex information systems, in distributed and heterogeneous environments, in permanent technological mutation, 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 areas of software engineering in its multiple aspects, ranging from the conception of information systems for all types of companies to the implementation of complex distributed systems, based on internet technologies. The MSc degree in Computer Science and Engineering of the IST campus at Alameda 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-A offers attractive specializations both for the students and the market, also serving as a strong basis for students intending to attend doctoral programs.

Master's Degree in Computer Science and Engineering – Taguspark (MEIC-T)
(Coordinator: Prof. Mário Gaspar da Silva)

The MSc program at IST, Taguspark combines very high-quality MSc courses in different areas of study (enterprise information systems, multimedia, information technologies, intelligent systems, software engineering, embedded systems and networks) allowing students to acquire a large set of skills. The program is taught both in Portuguese and in English, and international students are welcomed. For more information, contact the MSc coordinator.

The experts holding an MSc degree in Computer Science and Engineering will be able to work on the complex information systems that exist today in large companies and public administrations. The degree provides students with the theories, models and tools that qualify them to analyse, design and build a wide variety of large and complex information systems. The main focus of the course is on the products, technologies, solutions and IT services for

organizations and social systems. This ranges from multimedia systems to embedded systems, and from IT infrastructures to enterprise systems.

PhD Program in Computer Science and Engineering (DEIC)

(Coordinator: Prof. Luís Rodrigues)

The PhD program in Computer Science and Engineering complements the basic training in computer and systems engineering through further studies, and research and development in emerging areas of knowledge. In particular, after completing this degree students will be able to apply rigorous skills to advance the state of the art in areas ranging from analysis, design, modelling, production, operation and maintenance of computer applications and information systems to computer architectures and networks.

The PhD program aims at training researchers in the field of information technology and computer engineering. 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 work 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 analyse, evaluate and synthesise complex new ideas;
 - Learn to communicate with their peers, the academic community and society at large on the topics they specialised in;
-
- During the first year, the candidates must enrol 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 defence 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 enrol 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.

Bachelor's 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.

The graduates of LETI are provided with a solid basis in these engineering areas, 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 2nd cycle MSc 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.

Master's 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.

Master's 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 IST and Universidade Aberta. The 1st edition was launched in 2013 and we received 65 applications, and now in 2014 we received 60 applications.

Currently, there are about 80 students actively enrolled in courses, including 25 students starting their master's theses. Due to this success, the Department approved starting the process to create a new online master's degree.

The main activities as coordinator, together with two colleagues from Universidade Aberta, have been to monitor the students, courses, and lecturers, detecting and solving issues and problems, and making sure the master's degree goes smoothly as far as possible. We have been paying close attention to the execution of the courses, with biweekly meetings with the lecturers teaching courses. We also closely monitor the activities going on in the MISE information system (based on Moodle), and organize meetings with the MISE Scientific Council and other stakeholders.

In July we organized an offline week in Montijo (a small city nearby Lisbon) for the students and lecturers and approximately half the students (including almost all of those now starting their theses) were present and deeply involved during the entire week. Amongst many other activities, the students had a chance to meet and socialize with the lecturers, and vice-versa. We had several presentations from IT companies, large IT customers and top head hunters, as well as presentations by lecturers about trendy topics and some excellent projects by students.

The main objective of the week, however, was to match students with lecturers to define the topic of their master's theses, and all students that participated in the offline week left with a topic for the thesis. We will now continue to monitor the evolution of the theses to increase the probability of success since we all know that failure rates in master's theses are very high.

As the 3rd edition will be managed by Técnico, we now have the challenge of creating all the necessary conditions to start receiving applications in May. Additionally, the master's theses should continue to be closely monitored to make sure that most of them will be discussed in July during the next offline week in Montijo.

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 program at IST and another half do the first 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.

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 consortium 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 consortium. At IST, the program is structured as part of DEIC. The first group of students enrolled in 2012-2013. Up to now, there have been 10 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.

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. There

is now a new specialisation in Clinical Engineering, jointly offered with the Department of Engineering Management. The specialization curriculum includes two courses from the Department: the Information Systems and Databases course, previously offered as an elective course to 2nd cycle degrees, and a new Biomedical Informatics course that master's students in Computer Science and Engineering (MEIC) and Telecommunications and Computer Science (METI) can also take. Both courses are mandatory in the Clinical Engineering specialization, which has attracted a significant number of students in its initial year. 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 the courses offered by the Department of Computer Science and Engineering.



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.



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LEIC and MEIC new curricula

The Department's educational offer evolved during the year 2014 in our two main graduate courses.

Restructuring of LEIC - The new curriculum of LEIC was offered for the first time in the academic year of 2013/14, after successfully solving specific problems posed by the individual academic paths of the students, which are typically associated with the first implementation of a new curricula.

An effort was made to find solutions that optimize the academic path of the students even for the (unfortunately frequent) cases of students whose set of completed courses differ significantly from those of a standard annual progress.

To the best of our knowledge, there weren't any situations where students felt that the new curriculum affected their normal progression.

In terms of the curricula itself, it seems to respond well to the originally set aims of reducing the students' workload in the first year. Other goals were to create courses for the first two years that aim to explain the profession of informatics engineering and the social impact of computer science, and to better streamline the courses on mathematics and physics.

Obviously the main goal of improving the global productivity of LEIC can only be evaluated at the end of a full 3-year-cycle.

Restructuring of MEIC - This was the main conceptual challenge for the year 2014 and required an in-depth discussion about existing courses and specialization profiles. The development of the new MEIC curriculum included totally new approaches with respect to the current curricula:

- Creating a single master's in computer science and engineering, without distinction between campuses, while maintaining the teaching activities on both campuses.
- Introducing flexibility in the educational path, allowing students to have a greater range of choice, removing the requirement of following rigid specialization profiles.

- Offering a significant coverage of the spectrum of relevant and current topics in computer science and engineering. The selection of these topics was aligned with the most relevant normative documents, in particular those published by the ACM and IEEE (ACM / IEEE-CS Jointly Published Curricula), as well as those that the Department's teaching and research staff consider most relevant.
- Rationalizing the teaching effort by evaluating the teaching effort associated with the current student body and by aggregating, restructuring or eliminating courses that are found to be clearly below the sustainability level of IST's curricular units (UC – Unidades Curriculares).

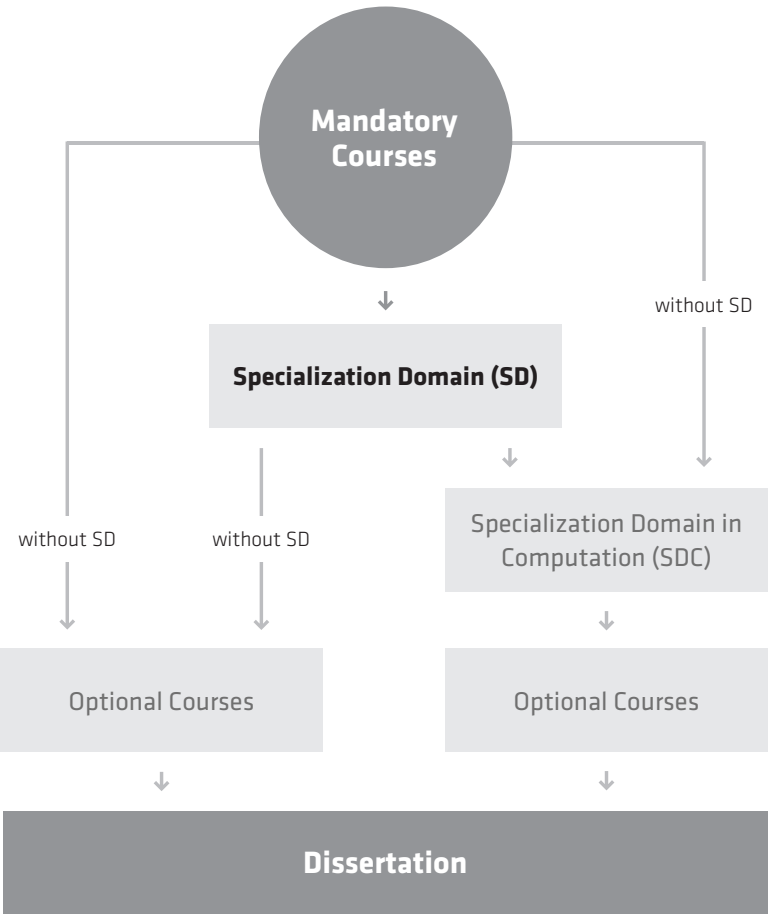
The proposal of the Department was accepted by the school, and its homologation by the General Directorate for Higher Education (DGES – Direção Geral do Ensino Superior) is under way, with the aim of starting in the academic year 2015/16.

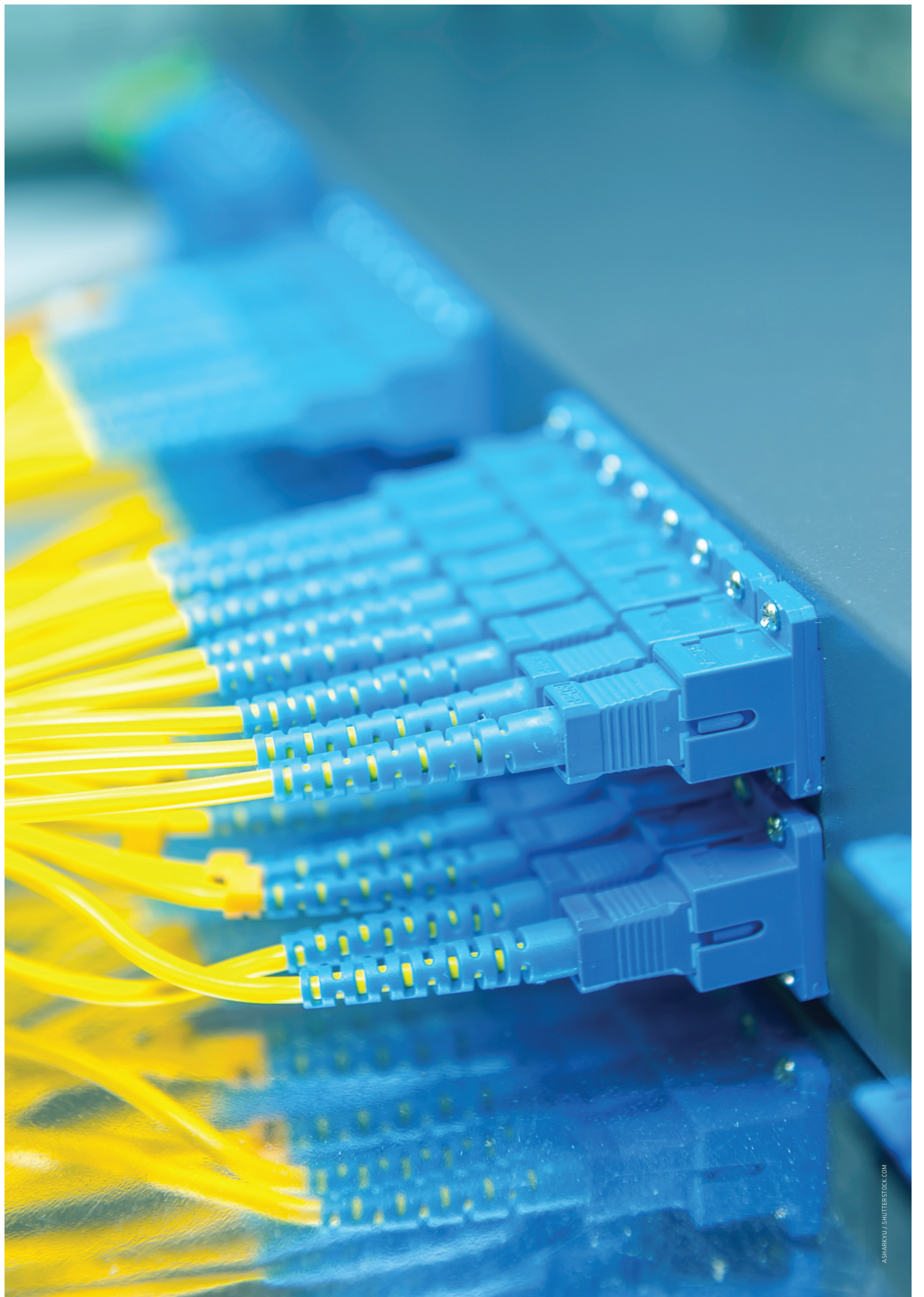
José Manuel da Costa Alves Marques



IST/DEI

The New Structure of MEIC

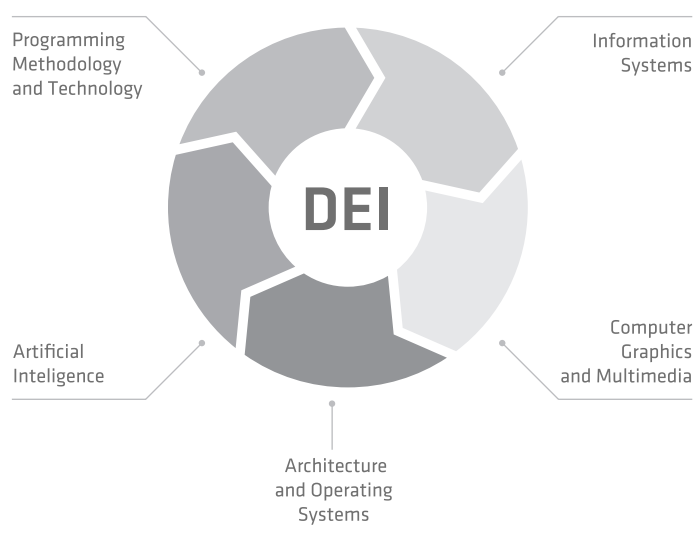




5. Research Activities

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:



Architecture and Operating Systems

(Scientific Coordination: Prof. José Alves Marques)

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 a teaching and research staff of circa 20 people that is devoted

to six large themes: hardware architectures (parallel processing, embedded systems, multimedia and security applications), operating systems, computer networks, computer security and distributed systems, security 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 the Person Before the Machine”. Professors of this area have two main research interests: visualization and interaction. The former studies advanced computer graphics techniques, 3D modelling, scientific visualization and information visualization. The latter researches human-computer interaction with an emphasis on user-centred design and accessibility. The courses offered by the area reflect these interests. At the undergraduate level, two introductory courses are offered: Interactive Computer Graphics and Human-Computer Interaction. At the MSc level, the area offers advanced courses on more specific subjects, including a specialization in Multimedia Systems (Taguspark) and Visualization and Interaction (Alameda), as well as a multidisciplinary Applicational Area on Games (Taguspark).

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 term was coined by John McCarthy who, in 1955, defined it as “the science and engineering of creating intelligent machines”. The scientific area of Artificial Intelligence of DEI integrates a set of professors covering, in their research, the majority of the topics in this area, including 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. João Marques Silva)

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

Most of the research performed by the DEI faculty is in laboratories/institutions supported by FCT (Fundação para a Ciência e a Tecnologia), 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)

Examples of the research carried on at DEI can be found in the faculty pages that follow in section 9.

6. Seminar and Lectures

The following is the list of the INESC-ID Seminar Series of 2014. We thank all the speakers for the generosity of their time and for their challenging and exciting presentations.

January 28

Janna Burman

University Paris-South 11 and LRI -
Laboratoire de Recherche en
Informatique, Orsay, France
*Self-Stabilizing Leader Election
in Population Protocols*

February 6

Paulo Monteiro

IST DEI
*Design and Implementation of a
Domain Specific Language for Next
Generation Sequence Analysis*

February 12

Emmanuel Jeannot

INRIA
*Topology-aware Placement
and Load-balancing*

February 20

Manuel Reis

IST DEI
*Computational Prediction of
MicroRNA Targets in Plant Genomes*

March 6

André Chambel

IST DEI
*Network Mining Based Analysis of
Whole Brain Functional Connectivity*

March 11

Dirk Ahlers

European Research Consortium for
Informatics and Mathematics
*Aspects of Geospatial Search
and Analysis*

March 20

Pedro Rijo

INESC-ID Lisboa and IST
*Extracting Academic Data and Linked
Data Anonymization*

March 21

Ibéria Medeiros

Faculdade de Ciências
da Universidade de Lisboa
*Automatic Detection and Correction
of Web Application Vulnerabilities
using Data Mining to Predict False
Positives*

April 2

Ronald de Haan

TU Wien
*Fixed-parameter Tractable
Reductions to SAT*

April 2

Luigi Carro

Universidade Federal
do Rio Grande do Sul
*Challenges for Embedded Systems
Development: Can We Have It All?*

April 24

André Carreiro
INESC-ID Lisboa and IST
*Integrative Biomarker Discovery in
Neurodegenerative Diseases: A Survey*

May 09

Aleksandar Dragojevic
Microsoft Research
FaRM: Fast Remote Memory

May 23

Marcelino Bicho dos Santos, Pedro
Alou Cervera
Universidad Politécnica de Madrid
*Advanced Techniques for Integrated
DCDC Converters*

May 26

Chin-Hui Lee
Georgia Institute of Technology
*A Deep Neural Network Approach to
Speech Enhancement*

June 12

Jorge dos Santos Oliveira
INESC-ID Lisboa and IST
*The Biodegradation and Surfactants
Database*

June 26

Valéria Magalhães Pequeno
INESC-ID Lisboa and IST
*Data Integration Tools for Pre-
Processing Biological Data*

October 30

Fabíola Greve
Universidade Federal da Bahia
(UFBA)
*Eventual Leader Election in Evolving
Mobile Networks*

November 14

Michel Raynal
Institut Universitaire de France
*Signature-Free Asynchronous Byzan-
tine Consensus with $< n/3$ and $O(n^2)$
Messages*

November 27

Pedro Ferreira
Carnegie Mellon University
*The Effect of Streaming Time-shifted
TV on TV Consumption*

November 27

Krzysztof Rojek
Czestochowa University
of Technology
*Using GPU Coprocessor to Accelerate
Computations in 3D MPDATA
Algorithm*

December 01

Anders Ynnerman
Eurographics
*Inside Information – From Martian
Meteorites to Mummies*

December 4

Klaus Berberich
Max-Planck-Institute für Informatics
*Frequent Sequence Mining
in MapReduce*

Distinguished Lecture Series

2014 January

Head in the clouds: an overview of cloud computing and some associated research challenges

Prof. Rodrigo Rodrigues, Universidade Nova de Lisboa, Portugal

2014 February

Talk1:The OpenRISC experience & Talk2:Machine Guided Energy Efficient Compilation

Dr. Jeremy Bennett , Embecosm, UK

2014 March

Disciplined Approximate Computing: From Language to Hardware, and Beyond

Prof. Luis Ceze, University of Washington, USA

2014 April

What happens when you let reality inspire your research?

Prof. Paulo Veríssimo, University of Lisbon, Portugal

2014 May

Elastic and Fault-Tolerant Stream Processing in the Cloud

Prof. Peter Pietzuch, Department of Computing, Imperial College London

2014 June

Behavioral Signal Processing: Enabling human-centered behavioral informatics

Prof. Shrikanth Narayanan, University of Southern California, USA

2014 October

Folk Theorems for Multi-Agent Systems

Prof. Michael Wooldridge, University of Oxford



7. Doctoral Theses

In 2014, 16 doctoral theses were successfully defended in the 3rd cycle courses coordinated by DEI. 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 sincerest thanks to all the colleagues from other departments who participated in the supervision of many of these theses.

PhD Program in Computer Science and Engineering (DEIC)

Student Name: David de Almeida Ferreira

Title: RSLingo: A Formal Requirements Specification Approach Based on Linguistic Patterns

Supervisor: Professor Alberto Manuel Rodrigues da Silva

Student Name: André Guilherme Nogueira Coelho dos Santos

Title: A DSL-based Approach for the Specification of Software Adaptations in Embedded Systems

Supervisor: Professor Pedro Nuno Ferreira da Rosa da Cruz Diniz

Co-supervisor: Professor Diogo Manuel Ribeiro Ferreira

Student Name: Rúben Filipe de Sousa Pereira

Title: A Framework for Implementing IT Governance

Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: André Tiago Abelha Pereira

Title: Socially Present Agents for Tabletop Games

Supervisor: Professor Rui Filipe Fernandes Prada

Co-Supervisor: Professora Ana Maria Severino de Almeida e Paiva

Student Name: Pedro Hugo de Queirós Alves

Title: Scalable and Privacy-enabled Message Propagation for Distributed Context-Aware Systems

Supervisor: Professor Paulo Jorge Pires Ferreira

Student Name: Fernando Miguel Santos Gamboa Lopes de Carvalho

Title: Optimizing Memory Transactions for Large-Scale Programs

Supervisor: Professor João Miguel Pinheiro Cachopo

Student Name: Orlando Miguel Cruz da Anunciação
Title: Application of Data Mining Techniques to Identify Disease Susceptibility from Geno-type Data
Supervisor: Professor Arlindo Manuel Limede de Oliveira
Co- Supervisor: Professora Susana de Almeida Mendes Vinga Martins

Student Name: Cláudia Sofia Sevivas Ribeiro
Title: Serious Games for Learning: A Model of Driving Attributes for the Medical Domain
Supervisor: Professor José Luís Brinquete Borbinha
Co- Supervisor: Professor João António Madeiras Pereira

Student Name: Miguel Filipe Leitão Pardal
Title: Scalable and Secure RFID Data Discovery
Supervisor: Professor José Manuel da Costa Alves Marques
Co- Supervisor: Professor Sanjay Emani Sarma

Student Name: Nuno Claudino Pereira Lopes
Title: Automatic Synthesis of Weakest Preconditions for Compiler Optimizations
Supervisor: Professor José Carlos Alves Pereira Monteiro

Student Name: Andreia Liliana Perdigão da Silva
Title: Pattern Mining on Data Warehouses: A Domain Driven Approach
Supervisor: Professora Cláudia Martins Antunes

Student Name: Sérgio Miguel Martinho Fernandes
Title: Strongly Consistent Transactions for Enterprise Applications: Using Software Transactional Memory to Improve Consistency and Performance of Read-Dominated Workloads
Supervisor: Professor João Manuel Pinheiro Cachopo
Co- Supervisor: Professor António Manuel Ferreira Rito da Silva

Student Name: Gustavo Soares Santos
Title: Reusable and Interoperable Web-Based Intelligent Tutoring Systems as Open Educational Resources Through E-Learning Standards
Supervisor: Professor Joaquim Armando Pires Jorge

Student Name: Nelson Fernando Pinheiro da Gama
Title: Integrating Enterprise Architecture and Service Management
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

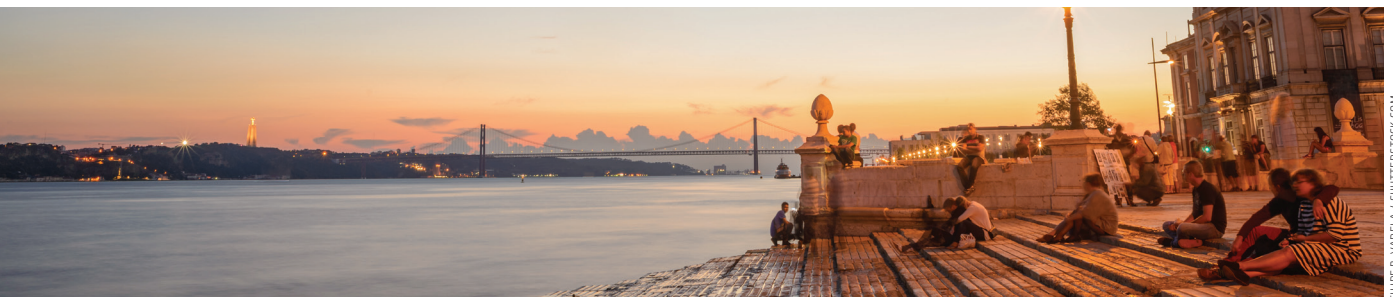
Student Name: Oksana Denysyuk
Title: Fault-Tolerant Renaming in Synchronous Message-Passing Systems
Supervisor: Professor Luís Eduardo Teixeira Rodrigues

Student Name: João Paulo Pinto Trindade
Title: A Bloom Filter Based Routing Protocol for Large Scale Mobile Ad Hoc Networks
Supervisor: Professora Teresa Maria Sá Ferreira Vazão Vasques
Co- Supervisor: Professor Ricardo Jorge Feliciano Lopes Pereira

Student Name: António Leonardo Gonçalves
Title: "Organization Modelling Through Activity Diagrams: An Approach Supported by Theory"
Supervisor: Professor Pedro Manuel Moreira Vaz de Sousa
Co- Supervisor: Professora Marielba Zacarias

Student Name: João António Rodrigues Sacramento
Title: "Efficient storage and retrieval of memories in neural networks"
Supervisor: Professor Andreas Miroslaus Wichert

Erasmus Mundus (Sapienza University of Rome)
Student Name: Sebastiano Peluso
Title: "Efficient Protocols for Replicated Transactional Systems"
Supervisor: Professor Francesco Quaglia
Co- Supervisor: Professor Paolo Romano



8. Master's Theses

In 2014, 131 master's theses were successfully defended in the courses coordinated by DEI. 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 sincerest thanks to all the colleagues from other departments who participated in the supervision of many of these theses.

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

Student Name: Ricardo Calado Correia Lourenço

Title: AIDA-CMK: Multi-Algorithm Optimization Kernel applied to Analog IC Sizing

Supervisors: Professor Nuno Cavaco Gomes Horta and Professor Manuel Barros

Student Name: Vahid Keshavarz Hedayati

Title: AVOZ - Speech Recognition of Elderly Voices

Supervisors: Professora Isabel Maria Martins Trancoso and Professor Thomas Pellegrini

Student Name: Cristiana Filipa Lopes Amorim

Title: Automatic Tool for Screening of Cognitive Impairments

Supervisors: Professora Isabel Maria Martins Trancoso and Professor Alberto Abad Gareta

Student Name: Marcelo José Costa Feliciano Tolentino da Silva

Title: Avaliação da Segurança de Sistemas de Informação usando uma Abordagem Multicritério

Supervisors: Professor Miguel Bignolas Mira da Silva and Professor João Carlos da Cruz Lourenço

Student Name: Eduardo Miguel da Silva de Oliveira Serrano

Title: Cloud Framework for Wireless Sensor Networks

Supervisor: Professor Artur Miguel do Amaral Arsénio

Student Name: Paulo Miguel Chaves Gonçalves

Title: Combining Multitouch Gestures and Sketches to Explore Photo Collections

Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: Márcio Nataniel Guilherme Narciso
Title: Dynamic Generation of Interfaces for Domotic Systems
Supervisor: Professor Renato Jorge Caleira Nunes

Student Name: João Tiago Ferreira Coutinho Arez da Cruz
Title: FlexTrans - Solução de Suporte a Serviços Flexíveis de Transporte de Passageiros
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: João Pedro Passos Figueiras
Title: Formula Student Championship: An Integrated Data Processing Module Adapted for Pit-Stop Scenarios
Supervisors: Professor Nuno Filipe Valentim Roma and Professor Ricardo Jorge Fernandes Chave

Student Name: Lizbeth Monica Cuba Samaniego
Title: Implementing a Dashboard for Data Exchange on the REPOX Tool
Supervisors: Professor José Luís Brinquete Borbinha and Professor Gabriel César Ferreira Pestana

Student Name: Orlando Manuel Pereira Agostinho
Title: Modelação Ontológica aplicada à Engenharia e à Governação dos Processos de Reclamações de Clientes
Supervisors: Professor José Manuel Nunes Salvador Tribolet and Professora Ana Estrela Barros Leite

Student Name: Rui Alexandre Enes Alves
Title: MyPTNow: Como Ir Daqui Para Algum Lado em Transportes Públicos
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Valter Miguel Gaspar Nepomuceno
Title: OrganiX - Collect Implicit Organizational Knowledge Through a Gaming Platform
Supervisor: Professor José Luís Brinquete Borbinha

Student Name: Carlos Filipe da Silva Portinha e Costa
Title: Parallelization of SAT Algorithms on GPU
Supervisors: Professor Luís Jorge Monteiro Guerra e Silva and Professor Paulo Godinho Flores

Student Name: Nuno Miguel Mendes Correia
Title: RFIDToys: A Flexible Testbed Framework for RFID Systems
Supervisor: Professor José Manuel da Costa Alves Marques and Professor Miguel Filipe Leitão Parda

Student Name: Hirak Jyoti Kashyap
Title: Secure Dynamic Reconfiguration of FPGAs
Supervisors: Professor Ricardo Jorge Fernandes Chaves and Professor Sanjay Kumar Jena

Student Name: Tiago Miguel Catarino Antunes
Title: Sepsis Fast Track: A Simulation Game for Clinical Education based on the Sepsis Fast Track Process
Supervisors: Professor João António Madeiras Pereira and Professora Cláudia Sofia Sevilas Ribeiro

Student Name: Henrique Guimarães Malheiro
Title: Track It! Enhancing GPS-Enabled Applications for Outdoor Sports and Activities
Supervisor: Professor João Manuel Brisson Lopes

Student Name: José Manuel Neto Granjo
Title: Validating Value Network Business Models
Supervisors: Professor Miguel Bignolas Mira da Silva and Professor Artur Miguel Pereira Alves Caetano

Student Name: Pradeeban Kathiravelu
Title: An Elastic Middleware Platform for Concurrent and Distributed Cloud and MapReduce Simulations
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Orçun Yildiz
Title: Exploring Energy Behaviors of I/O Management Approaches for Exascale Systems
Supervisor: Professor José Carlos Campos Costa

Student Name: Qi Qi
Title: Optimistic Concurrency Control in a Distributed NameNode Architecture for Hadoop Distributed File System
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Tamas Balogh
Title: Privacy for the Personal Data Vault
Supervisors: Professor Ricardo Jorge Fernandes Chaves and Professor Christian Schaefer

Student Name: Pedro Lobato de Faria Rijo
Title: Privacy-preserving Data Publishing for the Academic Domain
Supervisors: Professor Alexandre Paulo Francisco and Professor Mário Jorge Costa Gaspar da Silva

Student Name: Anh Phuong Tran
Title: Reliable and Locality Driven Scheduling in Hadoop
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: Pushparaj Motamari
Title: Snapshotting in Hadoop Distributed File System for Hadoop Open Platform as Service
Supervisor: Professor Luís Manuel Antunes Veiga

Student Name: João Augusto Curto Leiria Dias
Title: LogMe - Where Have I Been, What Have I Done?
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: João David Caires Vieira
Title: Classification in the Presence of Background Domain Knowledge
Supervisor: Professora Cláudia Martins Antunes

Student Name: Viviana Isabel Guerreiro Grave Cabrita
Title: Identificar, Ordenar e Relacionar Eventos
Supervisors: Professor Nuno João Neves Mamede and Professor Jorge Manuel Evangelista Baptista

Student Name: André Carlos Rita do Vale
Title: Mining Coherent Evolution Patterns in Education through Biclustering
Supervisors: Professora Sara Alexandra Cordeiro Madeira and Professora Cláudia Martins Antunes

Student Name: Hugo André Gomes Sequeira
Title: Industrial Energy Management in the Cloud
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: João Guilherme Barros dos Santos
Title: Graphical Interfaces for User Behavior Transformation in the Energy Domain
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Gonçalo Andre Rodrigues Suissas
Title: Verb Sense Classification
Supervisors: Professor Nuno João Neves Mamede and Professor Jorge Manuel Evangelista Baptista

Student Name: Alexandre Cardoso Pais de Almeida
Title: Automatic Dependency Identification for Isolation of Software Errors
Supervisor: Professor João Coelho Garcia

Student Name: André Filipe de Melo dos Santos Felício
Title: Simulating Emotional Behaviors in a Strategy Video Game Artificial Player: An Emotional Artificial Intelligent Player for Starcraft II
Supervisor: Professor César Figueiredo Pimentel

Student Name: João Miguel Calado Vieira
Title: mCALL: Reconhecedor de Esboços Multiuso
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: Cláudia Filipa Rosa Henriques
Title: Implementation of OpenMP on Application-Specific Architectures
Supervisors: Professor David Manuel Martins de Matos and Professor Nuno Filipe Valentim Roma

Student Name: Daniel Sousa Veloso de Oliveira Cardoso
Title: Exploration of Temporal Patterns in Classification Problems
Supervisor: Professora Cláudia Martins Antunes

Student Name: Daniel José Domingos Serrano
Title: Learning Compact Models for Representing Sets of Patterns
Supervisors: Professora Cláudia Martins Antunes

Student Name: Alexandre Santos Henriques
Title: Encaminhamento de Pessoas e Veículos em Espaços Fechados
Supervisor: Professor Renato Jorge Caleira Nunes

Student Name: Pedro dos Santos Lopes Curto
Title: Classificador de Textos Para O Ensino de Português Como Segunda Língua
Supervisors: Professor Nuno João Neves Mamede and Professor Jorge Manuel Evangelista Baptista

Student Name: Miguel Ângelo da Terra Neves
Title: Distributed Solver for Maximum Satisfiability
Supervisors: Professor Vasco Miguel Gomes Nunes Manquinho and Professora Maria Inês Camarate de Campos Lynce de Faria

Student Name: João Miguel Pataca dos Santos Delgado Oliveira
Title: VI-TRUST: Visualisation and Interaction on project “Transitions to the Urban Water Services of Tomorrow”
Supervisors: Professor Joaquim Armando Pires Jorge and Professor Alfredo Manuel dos Santos Ferreira Júnior

Student Name: Francisco Afonso Raposo
Title: Influence of Summarization on Music Classification Tasks
Supervisors: Professor David Martins de Matos and Professor Ricardo Daniel S. F. Marques Ribeiro

Student Name: Fábio Oliveira Garrido Carballo
Title: Masters’ Courses Recommendation: Exploring Collaborative Filtering and Singular Value Decomposition with Student Profiling
Supervisor: Professora Cláudia Martins Antunes

Student Name: João Nuno Pires Amaral
Title: Improving DPA Analysis with Distributed Computing Using OpenCL
Supervisors: Professor Ricardo Jorge Fernandes Chaves and Professor Pedro Filipe Zeferino Tomás

Student Name: Manuel da Silva Santos Gomes Ferreira
Title: Efficient Support for Selective MapReduce Queries
Supervisor: Professor Luís Eduardo Teixeira Rodrigues

Student Name: António Carlos Pereira de Sousa de Carvalho Barreto
Title: TDPrefixGrowth: An Algorithm for Mining Multiple Sequential Periodic Regularities
Supervisor: Professora Cláudia Martins Antunes

Student Name: Tiago Alexandre Afonso Aguiar
Title: Ctutor
Supervisor: Professor João Nuno de Oliveira e Silva

Student Name: José Jorge dos Reis
Title: Prognóstico de Doentes com Esclerose Lateral Amiotrófica usando Modelos Gráficos Probabilísticos
Supervisors: Professora Sara Alexandra Madeira and Professora Alexandra Sofia Martins de Carvalho

Student Name: Ricardo Jorge Durães de Sá Machado de Carvalho
Title: Authentication Security through Diversity and Redundancy for Cloud Computing
Supervisor: Professor Miguel Nuno Dias Alves Pupo Correia

Student Name: Filipe Alexandre Barroso
Title: GreenMobile – Interest Awareness for Mobile Energy Saving
Supervisor: Professor Paulo Jorge Pires Ferreira

Student Name: Rodrigo Fraga Barcelos Paulus Bruno
Title: freeCycles - Efficient Data Distribution for Volunteer Computing
Supervisor: Professor Paulo Jorge Pires Ferreira

Student Name: Miguel Filipe Elias Palmeiro de Brito Beatriz
Title: Framework para Detecção Automática de Vulnerabilidades em Aplicações Web usando Fuzzing
Supervisor: Professor Miguel Nuno Dias Alves Pupo Correia

Student Name: Joana Borges Pereira
Title: Living Slides
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Pedro Miguel Barata Antunes
Title: A Maturity Model for Energy Management
Supervisors: Professor Paulo Jorge Fernandes Carreira and Professor Miguel L. Bignolas Mira da Silva

Student Name: Cecília Margarida Furtado Raposo
Title: A Recommendation Method Based on Personalized Random Walks
Supervisors: Professor Bruno Emanuel da Graça Martins and Professor Pável Pereira Calado

Student Name: João Pedro Marques Alves
Title: Architecture Principles Compliance Analysis
Supervisors: Professor André Ferreira Ferrão Couto e Vasconcelos and Professor Pedro M. M. V. A. de Sousa

Student Name: Joana Filipa Alves Dias Pinto
Title: BACH - Exploração de Coleções Musicais Usando O Histórico de Audição
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: Luís Filipe Lopes Monteiro
Title: Cloud Service Broker - Assessing Provider Attributes In a Governmental Cloud
Supervisor: Professor André Ferreira Ferrão Couto e Vasconcelos

Student Name: Marco António Pereira Arede
Title: DEMO-based Cost Model
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: Filipe Manuel Lemos Ferreira
Title: Data Governance in Engineering and Science Projects
Supervisor: Professor José Luís Brinquete Borbinha

Student Name: Mário Nuno Letria Ribeiro
Title: Extraction of Non-Taxonomic Relations from Texts to Enrich a Basic Ontology
Supervisor: Professora Helena Sofia Andrade Nunes Pereira Pinto

Student Name: Ricardo Antunes Lopes da Cunha
Title: Improvise - Criação de Playlists Tendo em Conta A Actividade do Utilizador
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: Diogo Gil Vieira Henriques
Title: LSpeakIt: Interface Imersiva para Pesquisa de Objectos
Supervisors: Professor Alfredo M. dos Santos Ferreira Júnior and Professora Isabel M. M. Trancoso

Student Name: Bruno Jesus Andrade
Title: Locality and Interest Awareness for Wireless Sensor Networks (LIASensor)
Supervisors: Professor Paulo Jorge Pires Ferreira and Professor Luís Manuel Antunes Veiga

Student Name: Indira Gandi Mascarenhas de Brito
Title: Making Predictions with Textual Contents
Supervisor: Professor Bruno Emanuel da Graça Martins

Student Name: Ricardo Filipe Pateiro Marcão
Title: Monitorização do Desempenho Curricular do Aluno Universitário
Supervisor: Professor Gabriel César Ferreira Pestana

Student Name: Daniela Filipa Pedro Fontes
Title: Quantum Pirates - A Quantum Game - Theory Approach to The Pirate Game
Supervisor: Professor Andreas Miroslaus Wichert

Student Name: Luís Carlos Mendes Rosado
Title: RISCOS - Recuperação de Imagens usando Esboços
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: Ricardo Nuno Vieira Dionísio
Title: The Role of Technological Artefacts and Enterprise Architecture in Enterprise Transformation
Supervisors: Professor José Manuel N. Salvador Tribolet and Professor André Ferreira Ferrão Couto e Vasconcelos

Student Name: João Cintra Torres Reis Araújo
Title: Virtual Reality for Lighting Simulation in Events
Supervisors: Alfredo Manuel dos Santos Ferreira Júnior and Professor Paulo Jorge Fernandes Carreira

Student Name: Tiago João Alves Duarte
Title: WeatherIST - iOS Application for Detailed Weather Prevision in Continental Portugal
Supervisor: Professor Arlindo Manuel Limede de Oliveira

Student Name: Hugo Rafael Albino Ramos
Title: eXtreme Enterprise Architecture Planning (XEAP)
Supervisor: Professor André Ferreira Ferrão Couto e Vasconcelos

Student Name: André Miguel Nunes Machado
Title: Costing as a Service
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: Rui Manuel Ramos Teixeira da Silva
Title: TennisCopter: Towards Table Tennis with a Quadrotor Autonomous Robot and Onboard Vision
Supervisor: Professor Francisco António Chaves Saraiva de Melo

Student Name: Nuno Gonçalo Trindade Lopes da Costa
Title: Spatial Augmented Reality on Mobile Robots
Supervisor: Professor Artur Miguel do Amaral Arsénio

Student Name: Inês Isabel Bairros Moital
Title: paSSPORT Suggestion System for Players based On peRsonaliTy
Supervisor: Professor Carlos António Roque Martinho

Student Name: David Emanuel Ribeiro Gaspar
Title: Raspberry Pi: A Smart Video Monitoring Platform
Supervisor: Professor Nuno Filipe Valentim Roma

Student Name: Inês Rodrigues Almeida
Title: Exploring Challenges in Avatar-based Translation from European Portuguese to Portuguese Sign Language
Supervisor: Professora Maria Luísa Torres Ribeiro Marques da Silva Coheur

Student Name: David José Martins Forte
Title: Extracting Relationships and Network Structures from Text
Supervisor: Professor Bruno Emanuel da Graça Martins

Student Name: Ricardo Andrade Fernandes
Title: IST Shuttle: Sistema de Gestão em Tempo Real do Serviço de Shuttle - Front-Office
Supervisors: Professor Ricardo Jorge F. Lopes Pereira and Professor Teresa Maria Sá F. Vazão Vasques

Student Name: João Miguel Viana Amaral Craveiro
Title: Tangible Interaction on Different Technological Setups
Supervisors: Professor Francisco João D. C. C. dos Santos and Professora Ana M. S. de Almeida e Paiva

Student Name: Eduardo Jorge Sousa da Cunha
Title: Characterization of Geographic Regions Based on Georeferenced Data from the Social Web
Supervisor: Professor Bruno Emanuel da Graça Martins

Student Name: Rui André Pinto dos Santos
Title: Wiride - An Application for a Carpooling System
Supervisor: Professor Alberto Manuel Ramos da Cunha

Student Name: Vilma Rodrigues Jordão
Title: EduVIS: Visualização Interactiva de Dados Educacionais
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Nuno Ricardo da Silva Mourão
Title: Métricas para Governo e Gestão de Projetos de Tecnologias de Informação
Supervisor: Professora Maria do Rosário Gomes Osório Bernardo Ponces de Carvalho

Student Name: Ana Sara Couto da Avó Bernardo dos Santos
Title: Visualizing Business Process Costs
Supervisors: Professor Miguel L. Bignolas Mira da Silva and Professor João António Madeiras Pereira

Student Name: Sofia Inês Raposo Penaforte
Title: SocialVis: Aumentar o Conhecimento da Rede Social através de Visualização de Informação
Supervisor: Professor Daniel Jorge Viegas Gonçalves

Student Name: Soraia Vanessa Meneses Alarcão Castelo
Title: EmoPhoto: Identification of Emotions in Photos
Supervisor: Professor Manuel João Caneira Monteiro da Fonseca

Student Name: Filipa Rodrigues Rebelo
Title: RDF Repository for Biological Experiments
Supervisor: Professor: José Luís Brinquete Borbinha

Student Name: Daniel Filipe Domingos Simão
Title: GeoCake: Modelação Expedida de Terrenos e Subsolos com Interação Baseada em Gestos
Supervisors: Professor Joaquim Armando Pires Jorge and Professor Daniel Simões Lopes

Student Name: Rodolfo André Henriques dos Santos
Title: IST SmartOffice
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Ricardo Jorge Gonçalves Ribas
Title: Ecodrive
Supervisor: Professor Alberto Manuel Ramos da Cunha

Student Name: Ricardo João Galamba de Sepúlveda Ferrão
Title: MedicineAsk: An Intelligent Search Facility for Information about Medicines
Supervisors: Professora Helena I. de Jesus Galhardas and Professora Maria Luísa T. R. M. da S. Coheur

Student Name: António Pedro Rodrigues dos Santos Martins Pereira
Title: OntoC4S Framework: Constraint Based Framework for Sequential Pattern Mining
Supervisor: Professora Cláudia Martins Antunes

Student Name: Nuno Miguel Carvalho da Silva
Title: Modeling a Process Assessment Framework in ArchiMate
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Professor Pedro Manuel Moreira Vaz Antunes de Sousa

Student Name: Daniel Filipe Nunes Magarreiro
Title: Using Subtitles to Deal with Out-of-Domain Interactions
Supervisors: Professora Maria Luísa Torres Ribeiro Marques da Silva Coheur and Professor Francisco António Chaves Saraiva de Melo

Student Name: Diogo Fernando Cardoso da Silva Querido
Title: IT Governance in Public Administrations
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Professor José Manuel Nunes Salvador Tribolet

Student Name: António Maurício Lança Tavares de Sousa
Title: Remote Proxemics for Collaborative Virtual Environments
Supervisors: Professor Joaquim Armando Pires Jorge and Professor Alfredo Manuel dos Santos Ferreira Júnior

Student Name: Pedro Luís Linares Pinto
Title: Using Event Logs and the PSI-theory to Analyse Business Processes
Supervisors: Professor Miguel Leitão Bignolas Mira da Silva and Professor Artur Miguel Pereira Alves Caetano

Student Name: Ana Margarida Mendes Candeias
Title: Let's Play Along! - A Social Robot for Collaborative and Interactive Learning
Supervisor: Professora Ana Maria Severino de Almeida e Paiva

Student Name: Jorge Emanuel Rodrigues de Andrade
Title: Templates for Calculating IT Services Costs
Supervisor: Professor Miguel Leitão Bignolas Mira da Silva

Student Name: João Ferreira Loff
Title: Vadara: Predictive Elasticity for Cloud Applications
Supervisor: Professor João Coelho Garcia

Student Name: Daniel Jorge Rodrigues Ferreira
Title: Extreme Multicores: Programming of Systems with Thousands of CPUs
Supervisor: Professor José Carlos Alves Pereira Monteiro

Student Name: Nuno Miguel Trindade Marcos
Title: Efficient GPU Implementation of Bioinformatics Applications
Supervisors: Professor Nuno Filipe Valentim Roma e Professor Pedro Filipe Zeferino Tomás

Student Name: Ricardo Miguel Rebelo de Carvalho
Title: CargoStats: Extração Automática de Informação em Dados de Transporte
Supervisors: Professor Francisco António Chaves Saraiva de Melo e Professor José Alberto Rodrigues Pereira Sardinha

Student Name: Pedro Antonio Cardoso Barreto
Title: Treme-treme - A Serious Game to Teach Children Earthquake Preparedness
Supervisors: Professor Pedro Alexandre Simões dos Santos e Professor Rui Filipe Fernandes Prada

Student Name: Ana Teresa dos Santos Maria Ludovino Cunha
Title: SketchHouse - Interface Caligráfica para Criar Plantas e Atribuir Propriedades Térmicas
Supervisors: Professor Manuel João Caneira Monteiro da Fonseca e Professor João António Madeiras Pereira

Student Name: Pedro Alexandre Henriques Palma Ramos
Title: PyonR: A Python Implementation for Racket
Supervisor: Professor António Paulo Teles de Menezes Correia Leitão

Student Name: Paulo Ricardo Ribeiro Monteiro
Title: Ngless - A Domain Specific Language for Next Generation Sequence Data Analysis
Supervisors: Professora Ana Teresa Correia de Freitas and Dr. Luís Pedro Coelho

Student Name: André Filipe Oliveira Pinto Ribeiro
Title: Development of Mobile Applications using a Model-Driven Software Development Approach
Supervisor: Professor Alberto Manuel Rodrigues da Silva

Student Name: João André Lopes Ferreira
Title: Mobile Applications for Tourism: Assessing Service Models and Technologies from the Performance Perspective
Supervisor: Professor Alberto Manuel Rodrigues da Silva

Student Name: Simão Miguel Anjo Martins
Title: Classification On The Clouds Using MapReduce
Supervisor: Professora Cláudia Martins Antunes

Master's Degree (MSc) in Telecommunications and Informatics Engineering (METI)

Student Name: Nádja Pires Gonçalves
Title: A Testbed for Research and Development of SDN Applications Using Openflow
Supervisor: Professor Fernando Henrique Côrte-Real Mira da Silva

Student Name: Jérôme Mendes de Figueiredo
Title: CASHED - Cloud-Assisted Adaptive and Scalable Video Streaming for Heterogeneous End-User Devices
Supervisors: Professor Mário Serafim dos Santos Nunes and Professor Rui António dos Santos Cruz

Student Name: Vítor Oliveira Mansur
Title: Energy Efficiency Optimization Through Occupancy Detection and User Preferences
Supervisors: Professor Paulo Jorge Fernandes Carreira and Professor Artur Miguel do Amaral Arsénio

Student Name: Tiago Edgar Sôra Barbosa
Title: EnergyBrick: The Smart Low-Cost Energy Meter for the IoT
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Rui Miguel Guerreiro Francisco
Title: Flexible, Multi-platform Middleware for Wireless Sensor and Actuator Networks
Supervisor: Professor Artur Miguel do Amaral Arsénio

Student Name: Gonçalo David Martins Tourais Pereira
Title: Scroll, Match & Vote: An E2E Coercion Resistant Mobile Voting System
Supervisor: Professor Carlos Nuno da Cruz Ribeiro

Student Name: Henrique Pires dos Santos da Fonseca
Title: TAC SCM - Negociação Automatizada para uma Cadeia de Fornecimento
Supervisor: Professor José Alberto Rodrigues Pereira Sardinha

Student Name: João Manuel Ferreira Duarte Gomes
Title: TagusVanet - A Low-Cost, Integrated Framework for Development, Validation and Deployment of VANETs
Supervisor: Professora Teresa Maria Sá Ferreira Vazão Vasques

Student Name: José Luís Alexandre Cabral Almeida
Title: Tracking Management System for Security Enhancement
Supervisor: Professor Artur Miguel do Amaral Arsénio

Student Name: Pedro Manuel Vieira Gomes
Title: Ubiquitous Indoor Wireless Geo-Location System
Supervisor: Professor Ricardo Jorge Fernandes Chaves

Student Name: Bernardo Carvalho Simões
Title: Homophilic Self Organizing Feature Maps: Topic Detection on Socially Connected Data
Supervisor: Professor Pável Pereira Calado

Student Name: Artur Balanuta
Title: PerOMAS Personal Office Management and Automation System
Supervisors: Professor Ricardo Jorge F. Lopes Pereira and Professor Carlos Augusto Santos Silva

Student Name: André Filipe Caldaça da Silva Carvalho
Title: Movie Recommendation based on User Interests
Supervisor: Professor Pável Pereira Calado

Student Name: Rui José Lobato Camacho
Title: Intelligent Actuation in Home and Building Automation Systems
Supervisor: Professor Paulo Jorge Fernandes Carreira

Student Name: Dinamene de Lima Correia Almeida Barreira
Title: Multipath TCP Protocols
Supervisor: Professor Fernando Henrique Côrte-Real Mira da Silva

Student Name: Bernardo de Matos Patrocinio dos Santos
Title: Autonomous System for Track Athletics Guidance for the Visual Impaired
Supervisors: Professor Ricardo Jorge F. Chaves and Professor José Eduardo C. R. da Cunha Sanguino

Student Name: Pedro André da Silva Torres
Title: Continuous Improvement Meets Energy Auditing: An Energy Audit Tool for IST
Supervisors: Professor Paulo Jorge F. Carreira and Professor Mário Miguel F. Marques de Matos

Student Name: Ahmed Kamaleldin El Sayed Baioumy
Title: Micro Mobility Improvement in Proxy Mobile Ipv6 Domain
Supervisors: Professor Fernando Mira da Silva and Professor Rui M. Rocha

9. Staff

The faculty of the Computer Science and Engineering Department is composed of 77 professors. The faculty includes 9 full professors, 14 associate professors and 50 assistant professors. Additionally, the Department also has 4 invited assistant professors.

Each faculty member belongs to one of the five scientific 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 (19 professors), Computer Graphics and Multimedia (9 professors), Artificial Intelligence (13 professors), Methodology and Technologies of Programming (20 professors) and Information Systems (16 professors).

In addition, the staff at DEI also includes 1 coordinator and 10 collaborators.

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Research Areas and Interests

Pedro Adão is a researcher at the Security and Quantum Information Group at IT. His major research interests are mathematical foundations of cryptography, specification and verification of cryptographic protocols, and “physical” and “day-life” cryptography.

Academic Info and Highlights

Pedro Adão has led the FCT-funded project ComFormCrypt on secure abstractions of cryptography, and is a member of the ICT COST Action IC1306, Cryptography for Secure Digital Interaction. He has taught the MSc course Software Quality and the PhD courses Computational Models in Security and Security Engineering, and is a faculty member of the FCT-Doctoral program in the Physics and Mathematics of Information. He received the “Excellence in Teaching at IST” award in 2014. 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

Classes 2014: Foundations of 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 mining (MLDM), in particular temporal data mining, domain driven data mining and its semantic aspects. She leads research projects on data mining, 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 MLDM in undergraduate and post-graduate programs, along with foundations of programming in undergraduate programs

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Research Areas and Interests

João Pedro Barreto's research is mainly focused on software transactional memory, distributed data deduplication and optimistic replication in ubiquitous and pervasive computing.

Academic Info and Highlights

Member of INFORUM 2014 program committee (Session CMU). Principal researcher of the "specSTM: Software Transactional Memory with Thread-Level Speculation Support" research project (funded by FCT). Responsible Professor for the Distributed Systems course in 2014 (LEIC-T, LETI).



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Research Areas and Interests

José Borbinha is a member of the Information Systems research group at the INESC-ID. His main research interests range from the analysis and conceptual modeling of systems to the concerns of information management in any relevant information systems scenario.

Academic Info and Highlights

José Borbinha coordinates the local teams of the international research projects TIMBUS, 4C and E-ARK, and was a co-general chair and local chair of the DLM Forum 2014 conference. He is a member of the steering committees of the TPD and JCDL conferences, and member of the editorial board of the International Journal of Digital Libraries. He is a member of INCOSE and ACM, and senior member of the IEEE and former chair of the IEEE technical committee on Digital Libraries. During 2014 he taught courses at IST on business information systems, systems analysis and modeling, and information management. He is the coordinator of the administrative services of the DEI (and inherently member of the executive and coordinating committees of the DEI).



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Research Areas and Interests

Current research interests are centred in the areas of transactional memories, parallel programming, web engineering, and software architectures. Current projects are focused on improving the performance and applicability of software transactional memories.

Academic Info and Highlights

Principal investigator of the FCT research projects PASTRAMY and RuLAM. Member of the research team for the CloudTM project. Led the development of the first real-world application of a Software Transactional Memory to a production system (the FénixEDU project).

Artur Miguel Pereira Alves Caetano

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Research Areas and Interests

Artur Caetano is an associate researcher at INESC-ID's Information Systems group. His research interests are enterprise engineering and architecture, business process management, enterprise information systems, conceptual modelling, object-oriented analysis and design and semantic technologies.

Academic Info and Highlights

Lectures on enterprise architecture, business process management, service-oriented architectures and object-oriented analysis and design. Participates in the FP7 TIMBUS project on digital preservation, FP7 4C project on capabilities and cost models, FP7 E-ARK project on records and knowledge preservation, and in the CTRUST project on auditing and certification of digital repositories. Participates in the organization of scientific events such as the IEEE CBI conference, the Enterprise Model Analysis workshop at IEEE EDOC and the Enterprise Engineering track at the ACM SAC. Member of the ACM, IEEE, INCOSE, and full member of the CIAO! Enterprise Engineering Network.

Pável Pereira Calado

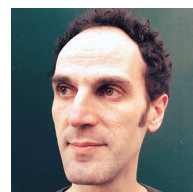
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Research Areas and Interests

Pável Pereira Calado is currently interested in the areas of information retrieval, information extraction, and recommender systems. More specifically, Pável Calado 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

Best Student Paper award (co-author) at IEEE/ACM Digital Libraries 2014 conference. General chair for the First DataStorm Big Data Summer School. Organizing committee for the Data and Knowledge Management track of the INForum 2014 Informatics Symposium. Member of the program committee for the conferences LA-WEB 2014 and DL 2014, and the WOSP 2014 workshop.



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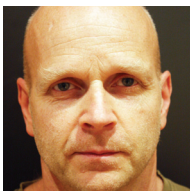
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Research Areas and Interests

Paulo Carreira is a senior researcher at INESC-ID. His current research primarily focuses on the agile creation of highly modular software for real-time data intensive applications such as energy management and building control.

Academic Info and Highlights

Leads two industry funded projects on Building Information Modelling. Member of the national standardization committee CT 192 Facilities Management. Researcher at the DataStorm nationally funded research project. Researcher at the SMARTCAMPUS EU STREP project. Participant researcher at the ELSTER e-Infranet project on “Green Sustainable Data Centres” (EU funded). Member of the IC1404 “Multi-Paradigm Modelling for Cyber-Physical Systems (MPM4CPS) EU COST Action. Co-organizer of the DS3 Summer School 2014. IEEE Senior Member.



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Research Areas and Interests

Researcher at the Security and Quantum Information group at Instituto de Telecomunicações. Interested in mathematical modelling, formal specification and verification. Current research involves design and verification of security protocols, and language based security.

Academic Info and Highlights

Editor of the DEI annual report 2014. Teaching 2014: Introduction to Algorithms and Data Structures.

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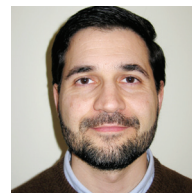
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Research Areas and Interests

Ricardo Chaves is a researcher at the Signal Processing group (SiPS) of INESC-ID. His research interests are focused on cryptographic systems, reconfigurable hardware architectures, and on embedded and user-oriented systems, in which he has published more than 30 papers in international journals and conferences.

Academic Info and Highlights

Dr. Chaves is a member of the Management Committee of EU COST Action TRUDEVICE.

Maria Luísa Torres Ribeiro Marques da Silva Coheur

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Research Areas and Interests

Luísa Coheur is a researcher at L2F/INESC-ID where she works in the natural language processing field. Her main research areas are question answering, machine translation and dialogue systems. She is currently working in three projects: Spedial (European project), Inside and eSPERTo (both national).

Academic Info and Highlights

Luísa Coheur is currently teaching Natural Language at MEIC-T. Last semester she taught Logic for Programming, and she received the “Excellence in Teaching” award. She is the representative of the scientific area of Artificial Intelligence and responsible for the Tagus library. She is a member of the COST European Network on Integrating Vision and Language. She organised the “Verão na Universidade de Lisboa”, Tagus campus, as well as the 3rd annual “PhD day” (also Tagus campus). She participated with several demos in the “Noite Europeia dos Investigadores”.



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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 PCAS, TLOUDS, MAFTIA, CRUTIAL, and ReSIST European projects. He has more than 100 publications. His main research interests are: cyber-security, intrusion tolerance, distributed systems, distributed algorithms, computer networks, cloud computing and critical infrastructure protection.

Academic Info and Highlights

Miguel Correia usually teaches courses in cyber-security and computer networks. He is coordinator of the bachelor's degree (BSc) in Computer Science and Engineering – Alameda.



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Research Areas and Interests

José Carlos Campos Costa is a researcher at INESC-ID. His main research interests include embedded systems software/hardware integration and software testing. He has participated in several research projects. He is the primary researcher in a national research project related with embedded software testing.

Academic Info and Highlights

José Carlos Campos Costa has taught courses on computer architectures, embedded systems, mobile computing and operating systems.

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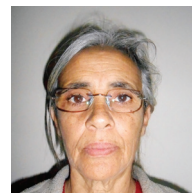
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Research Areas and Interests

Maria dos Remédios Cravo is'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. Currently he is the IEEE legal representative in Portugal. "Excellence in Teaching at IST" award recipient 2014. Classes in 2014: Services Engineering, Computer Networks Planning and Management, Independent Studies.



Alberto Manuel Ramos da Cunha

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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 (at the syntactic, semantic and pragmatic levels), distributed programming; distributed computing platforms; service based systems.

Academic Info and Highlights

Member of the program committee for the following conferences: 5th International Conference on Ambient Systems, Networks and Technologies; 5th International Conference on Emerging Ubiquitous Systems and Pervasive Networks; 3rd International Symposium on Intelligent Informatics; IEEE 8th International Symposium on the Maintenance and Evolution of Service-Oriented Systems and Cloud-Based Environments. Member of the reviewer committee for the following magazines: National Academy Science Letters; Journal of Systems and Software. Courses lectured: Introduction to Computer Architecture; Data Centres.

João Miguel de Sousa de Assis Dias

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Assistant Professor

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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 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 Programming, and Autonomous Agents and Multi-Agent Systems. He is currently part of the organizing committee of the workshop on Affective Agents held at IVA in 2014.

Maria Inês Camarate de Campos Lynce Faria

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Associate Professor

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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 board of the Scientific Council of INESC-ID. Member of the editorial board of the Journal of Artificial Intelligence Research. Workshop chair of the 17th International Conference on Theory and Applications of Satisfiability Testing (SAT'14). Classes in 2013/14: Logic for Programming, Boolean Constraints and Optimization. Recipient of the "Excellence in Teaching" award at IST.



Sérgio Miguel Martinho Fernandes

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Assistant Professor

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Research Areas and Interests

Sérgio Fernandes is a researcher of the Software Engineering Group at INESC-ID. His current research interests include transactional systems, software transactional memory, concurrent and parallel programming techniques, and web application development.

Academic Info and Highlights

Obtained PhD with a thesis titled “Strongly Consistent Transactions for Enterprise Applications: Using Software Transactional Memory to Improve Consistency and Performance of Read-Dominated Workloads”. Lecturer of Advanced Programming, Analysis and Synthesis of Algorithms, Introduction to Algorithms and Data Structures, and Object-Oriented Programming. Recipient of “Excellence in Teaching at IST” award for Software Engineering (2006) and Object-Oriented Programming (2012). Active contributor to open-source projects, such as Fénix Framework and JVSTM.



Diogo Manuel Ribeiro Ferreira

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Research Areas and Interests

Data science, log analysis, large-scale data and process mining, workflow systems, business process management (bpm), process modeling, enterprise systems integration, service-oriented architecture (SOA), context-aware services and applications, context inference

Academic Info and Highlights

Organizer of the 10th International Workshop on Business Process Intelligence 2014. Invited speaker at the BPM Summer School, University of Bayreuth, Germany, July 2014. Recipient of the ICGA Journal Award for the best paper published in 2012. Member of the review committee for the Best Process Mining Dissertation Award 2014. Member of the IEEE Task Force on Process Mining.

Paulo Jorge Pires Ferreira

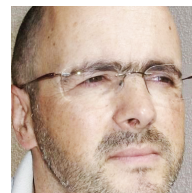
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Research Areas and Interests

Paulo Ferreira's research work covers the scientific research area of distributed systems, with emphasis on middleware, mobile and cloud computing, 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 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 member of the steering committee of the ACM/IFIP/Usenix Middleware, and senior member of ACM and IEEE.

Alexandre Paulo Lourenço Francisco

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Assistant Professor

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Research Areas and Interests

Alexandre P. Francisco is a researcher at INESC-ID. His current interests include algorithmics, computational science, graphs and programming, with applications in complex network mining and large data processing. He has collaborated on several national and international research projects solving problems in data management and processing, optimization and simulation, and in the development of scalable tools and algorithms.

Academic Info and Highlights

Alexandre P. Francisco led the FCT-funded project NetDyn on the dynamics of large complex networks. He has taught the MSc course on Advanced Algorithms and the PhD course Complex Networks Analysis. He received the "Excellence in Teaching at IST" award in 2014 and the Young Researcher award at INESC-ID in 2014.



Ana Teresa Correia de Freitas

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Research Areas and Interests

Current research interests are centred in the areas of computational biology, human genetics, 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

Coordinates the FCT research grant CAMP (PTDC/EIA-EIA/122534/2010). Member of the Scientific Council at IST. Member (CFO) of the executive committee of the Computer Science and Engineering Department (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/>). Head of the Knowledge Discovery and Bioinformatics research group at INESC-ID. CEO of HeartGenetics Genetics and Biotechnology SA, a spin-off of IST.



Helena Isabel de Jesus Galhardas

PhD: University of Versailles, France, 2001.

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Research Areas and Interests

Helena Galhardas is a researcher at INESC-ID. Her current research topics are: data cleaning and integration, data profiling, and information extraction.

Academic Info and Highlights

In 2014, Helena Galhardas co-organized (with Erhard Rahm) the 10th International Conference on Data Integration in Life Sciences, which took place in Lisbon. In 2014/15 (1st semester), she is teaching two courses: Databases (BSc in Computer Science and Engineering) and Information Management and Processing (MSc in Computer Science and Engineering).

João Coelho Garcia

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Research Areas and Interests

Researcher at the Distributed Systems group of INESC-ID Lisboa. Current research interests include platforms for large scale computing, cloud computing and automatic software fault detection.

Academic Info and Highlights

Representative of the Department's Architectures and Operating Systems scientific area. Courses in 2014: Cloud Computing, Platforms for Distributed Internet Applications and Operating Systems.

Mário Jorge Costa Gaspar da Silva

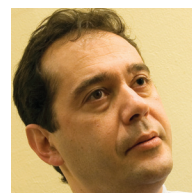
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Research Areas and Interests

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 is coordinating the Research Line of Excellency in Large-Scale Data Management (DataStorm).



Mário Rui Fonseca dos Santos Gomes

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Research Areas and Interests

Geographic Information Systems

Academic Info and Highlights

Classes: Human-Computer Interaction, Introduction to Human-Computer Interaction, Computer Graphics, Computer Graphics, Usability and Information Systems



Daniel Jorge Viegas Gonçalves

PhD: Instituto Superior Técnico, 2007.

Assistant Professor

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Research Areas and Interests

Daniel Gonçalves is a researcher at the Visualization and Multimodal Interfaces group of INESC-ID. His research encompasses the areas of information visualization, personal information management and accessibility. He is especially interested in using visualization of personal information to empower users to gain novel insights on their activities and lives.

Academic Info and Highlights

In 2014 Daniel Gonçalves was responsible for INESC-ID's team in the national EDUCARE project, in which information visualization techniques will be used in novel ways as a pedagogical aid, and for EU AAL PAELife, which strives to find new interaction techniques for the creation of personal life assistants for the elderly. He is also a member of the scientific committee of MISE - Master

in Information and Enterprise Systems.

Luís Jorge Brás Monteiro Guerra e Silva

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Assistant Professor

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Research Areas and Interests

Luís Guerra e Silva is a senior researcher at the ALGOS group of INESC-ID. His research interests are mainly focused on the design of efficient algorithms for verification and optimization problems, with applications in electronic design automation, software verification, networking, big data, etc.

Academic Info and Highlights

Luís Guerra e Silva is vice president of IST for Information and Communication Technologies and formerly was vice president of the Computer and Network Services division of IST. He teaches courses on programming, algorithms and software verification.

Joaquim Armando Pires Jorge

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Full Professor

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Research Areas and Interests

Joaquim Jorge's interests are in calligraphic and multimodal user interfaces, visual languages and pattern recognition techniques applied to human-computer interaction. He is author or co-author of over 260 papers published in peer-reviewed international conferences and publications.

Academic Info and Highlights

Joaquim Jorge serves or has served on the program committees of over 175 international conferences. Since 2007 he is editor in chief of Computers & Graphics Journal and serves or has served on the board of six other international journals. Since 2011 he is a member of the ERCIM editorial board. He is affiliated with ACM (senior member since 2007) / SIGGRAPH since 1989, IEEE Computer Society (senior member since 2000). Since 2014 he is chair of the ACM SIGGRAPH Small Conferences committee. In 2014 he was given the IFIP Silver Core Award for his services to IFIP TC13. Joaquim Jorge teaches User Interfaces and Computer Graphics.



Alfredo Manuel dos Santos Ferreira Júnior

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Research Areas and Interests

Alfredo Ferreira is a researcher of the Visualization and Intelligent Multimodal Interfaces Group at INESC-ID Lisboa. He works on multimodal and natural interfaces, virtual and augmented reality and 3D object retrieval.

Academic Info and Highlights

Alfredo Ferreira participated in the SmartSketches, Eurotooling21 and Maximus EC funded projects. His involvement in these projects focused on natural user interfaces and multi-user, large-scale and multi-display environments. At the national level, he participated in the DecorAR, MIVis and CEDAR projects and led the 3dORuS project. He was a member of the organizing committee of the INTERACT 2011 conference and is involved in the organization of the Eurographics 2016 conference. Alfredo Ferreira is member of ACM, IEEE and Eurographics Association.



António Paulo Teles de Menezes de Correia Leitão

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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

Coordinator of INESC-ID's research line of Computing Systems and Communication Networks. Scientific coordinator of INESC-ID's Software Engineering group. Principal researcher of the Rosetta project. Member of the steering committee of the European Lisp Symposium.

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 scientific 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 with the QREN and +Ciencia IT programmes. He has participated as advisor to the ISDAMP+ and ARCOPOL-PLATFORM projects on environmental protection preparedness and defences and the TURNKEY project on renewable energy. He teaches graduate courses on user centred design and undergraduate courses on computer graphics and human-computer interaction. João is the team captain of the Masters Ski Team Portugal.

Sara Alexandra Cordeiro Madeira

PhD: Instituto Superior Técnico, 2008.

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Research Areas and Interests

Sara C. Madeira is a senior researcher at INESC-ID where she received the Young Researcher award in 2013. Her research interests include algorithms, data mining, machine learning, bioinformatics and medical informatics.

Academic Info and Highlights

Sara C. Madeira has been leading the NEUROCLINOMICS (Understanding NEUROdegenerative diseases through CLINical and OMICS data integration) project since 2011, aiming to develop a sophisticated knowledge discovery system integrating data mining algorithms to unravel putative links between omics and clinical data, tackling disease diagnostic and prognostic markers, disease progression rates, and patient profiles. Amyotrophic Lateral Sclerosis and Alzheimer's disease are the case studies. She teaches undergraduate courses on algorithms and data structures and graduate courses on computational biology and data integration for bioinformatics.



Nuno João Neves Mamede

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Associate Professor

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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 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

In 2013/2014 Vasco Manquinho was responsible for the curricular unit and was a lecturer of theoretical classes on Analysis and Synthesis of Algorithms (LEIC-A). He was also a lecturer of Advanced Algorithms (MEIC-A). Member of the executive committee of the Computer Science and Engineering Department since 2011.

José Manuel da Costa Alves Marques

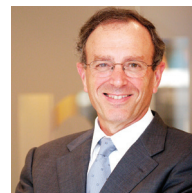
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Research Areas and Interests

José Alves Marques's 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, in particular the possibility of the interaction of trillions of devices with more or less processing power. This work has been developed with Prof. Miguel Pardal. Within the Link's companies, several R&D projects have also been proposed and developed in topics related to electronic payments, management of business information and enterprise architecture.

Academic Info and Highlights

Chair of the committee for the reformulation of the master's degree of Informatics and Computer Engineering program (MEIC). Launched a new initiative promoting relationships between IST and the business community, CIO@IST (<http://cio.tecnico.ulisboa.pt/>), inviting the CIO of the largest and most representative companies for a session with teachers and students. Responsible for the courses Distributed Systems and Enterprise Integration.

João Marques Silva

PhD: Univ. of Michigan, Ann Arbor, USA, 1995.

Full Professor

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Research Areas and Interests

Research interests include decision procedures, constraint solving and optimization, system verification and validation, with applications in software engineering, artificial intelligence, bioinformatics and operations research.

Academic Info and Highlights

Coordinates the FCT research grant POLARIS (PTDC/EIA-CCO/123051/2010). Coordinates the scientific area of Programming Technology and Methodology at IST. Member of the scientific board of the PhD degree in Informatics at IST. Member of the scientific board of the MSc degree in Informatics at IST. Member of the editorial board of JSAT. Associate editor of Integration.



Carlos António Roque Martinho

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Research Areas and Interests

Carlos Martinho is a Senior Researcher of GAIPS at INESC-ID. His research focuses on applying artificial intelligence, in particular affective computing, to enhance user experience with videogames. He has co-authored over 100 scientific papers on the subject, the book “Design and Desenvolvimento de Jogos” (2014), and participated in more than a dozen international projects on games with a purpose.

Academic Info and Highlights

Carlos Martinho lectures on games, artificial life and computer graphics, and received several excellence awards for his teaching. Classes: AVT-A, AVT-T, DDJ. Board of directors of SPCV. DC of VSGames 14. Program of ACE 14, AIIDE 14, FDG 14, IVA 14, VJ 14. Reviewer for IJHCS, Interaction Studies, ACM TOCHI. Panel at VJ 14, LisbonGameConf., S-F&F Conf. Jury Ordem dos Eng. Innovation Awards.



João Emílio Segurado Pavão Martins

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Research Areas and Interests

The research interests of João Pavão Martins are centred in the area of artificial intelligence with special emphasis in knowledge representation and reasoning.

Academic Info and Highlights

In the past 2 years, 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.

Bruno Emanuel da Graça Martins

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Research Areas and Interests

Bruno Martins is a researcher at the Data Management and Information Retrieval group of INESC-ID where he works on problems related to the general areas of geographic text mining and retrieval. He has been involved in several research projects related to geospatial aspects in information access and retrieval, and he has accumulated a significant expertise in this field.

Academic Info and Highlights

Bruno Martins is part of the information systems area of DEI/IST, and he teaches courses related to information management (i.e. in 2014 he taught MSc courses like Information Management and Processing and practical labs for the Databases undergraduate course). Bruno also has extensive reviewing experience (e.g. in 2014 he was PC member for and JCDL), and in 2014 he co-organized the Location and the Web workshop at CIKM.

Ana Gualdina Almeida Matos

PhD: École des Mines de Paris, France, 2006.

Assistant Professor

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Research Areas and Interests

Language based security. In particular the application of type systems and other programming language abstractions to securing information flow in concurrent, distributed and mobile settings, such as the Web.

Academic Info and Highlights

Coordinator of the BSc course Introduction to Algorithms and Data Structures, co-coordinator of the MSc course Software Security. PhD advisor of José Frago Santos on his thesis "Enforcing Secure Information Flow on Client Side Web Applications" (completed).



David Manuel Martins de Matos

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Research Areas and Interests

David Martins de Matos is a researcher at INESC-ID. His main interests are music information retrieval and extraction and related tasks, robotic interaction, and high-performance computing. He participates actively in both national and EU projects in those areas.

Academic Info and Highlights

Recently, David Martins de Matos participated in the “Noite Europeia dos Investigadores”, a social outreach activity for promoting science and scientific activities. At IST, he currently teaches Object-Oriented Programming, Compilers, and Natural Language Processing. He received the “Excellence in Teaching” award. He is in charge of DEI’s labs and has served as a representative of his scientific area. He has contributed regularly as a scientific reviewer and was a member of the organizing committee of PROPOR 2014



Francisco António Chaves Saraiva de Melo

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Assistant Professor

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Research Areas and Interests

Francisco S. Melo is a researcher at INESC-ID. He works in the general areas of machine learning and decision-theoretic planning, with particular emphasis on reinforcement learning, inverse reinforcement learning, active learning and robotic applications of machine learning.

Academic Info and Highlights

Since August 2014 Francisco S. Melo is the principal researcher of the INSIDE research project, funded under the Carnegie Mellon | Portugal program, which investigates the use of robotic technology in the therapy of autistic children. During 2014 he also acted as part of the program committee of the 29th AAAI Conference on Artificial Intelligence and the International Conference on Au-

tonomous Agents and Multiagent Systems.

Miguel Leitão Bignolas Mira da Silva

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Assistant Professor

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Research Areas and Interests

Information systems, in particular enterprise architectures, digital services innovation, and IT management and governance.

Academic Info and Highlights

Currently teaching information systems (online) and entrepreneurship at IST, and CRM as an invited professor at FEUP. “Excellence in Teaching” award for the last five years. Supervised four PhD students that graduated in the last two years. In 2014 had three papers accepted in “A” level journals. Coordinator of the master’s in Information and Enterprise Systems, a new online master degree offered by IST and Universidade Aberta. Responsible for external relations of DEI. Leader of the research group Digital Services Innovation at INOV INESC Inovação, currently with 17 researchers involved in more than 10 projects with companies and 300K€ expected revenue for 2014. Member of IEEE, ACM, AIS and the Portuguese Engineers’ Association.

José Carlos Alves Pereira Monteiro

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Associate Professor

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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. Coordinator of the master’s degree (MSc) in Computer Science and Engineering - Alameda (MEIC-A). 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 is a member of the INFORUM2014 program committee (Bioinformatics session). 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). He has served as a reviewer on Theoretical Computer Science, Bioinformatics, IEEE/ACM Transactions on Computational Biology and Bioinformatics and BMC Bioinformatics.



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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 LEIC-A. Responsible and lecturer for the course Search and Planning at LEIC-T. Chair of exam committee of several master's thesis defences at LEIC-A. Chair of exam committee of several master's thesis defences at LEIC-T.

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Research Areas and Interests

Include the recognition of human activities in far-field settings using space-varying HMMs and person re-identification using soft-biometrics features. The latter aims to identify instances, and associate the whereabouts of targeted people in crowded environments. Another line of research includes medical image using machine (deep) learning.

Academic Info and Highlights

Coordinates the international project “Analysis of Multiodal Medical Data Using Deep Belief Networks”, in collaboration with the University of Adelaide and Queensland. Currently member of a CMU-Portugal project, CMUP-ERI/HCI/0046/2013, AHA – Augmented Human Assistance, and of a European Commission project, FP7-ICT-288382, POETICON++ - Robots Need Language.

Renato Jorge Caleira Nunes

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Research Areas and Interests

Renato Nunes is an invited researcher at INESC-ID. His research interests are in the fields of intelligent buildings, home automation, smart homes and ambient intelligence. He is especially interested in the areas of energy efficiency and support mechanisms for the elderly to allow “aging in place”. He has competences in the domain of embedded systems, control networks and wireless networks.

Academic Info and Highlights

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.



Arlindo Manuel Limede de Oliveira

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Research Areas and Interests

Arlindo Oliveira is a researcher at INESC-ID in the Knowledge Discovery and Bioinformatics group. His major areas of interest are algorithms and complexity, machine learning and computational biology.

Academic Info and Highlights

Currently president of Instituto Superior Técnico. Member of the executive board. Member of KDBIO group of INESC-ID. Teaching: Introduction to Computer Science and Engineering, Programming/Foundations of Programming.



Ana Maria Severino de Almeida e Paiva

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Research Areas and Interests

Ana Paiva is a research group leader of GAIPS at INESC-ID and an adjunct scientist in the Artificial Intelligence Research Institute (IIIA) of the Spanish National Research Council (CSIC) in Barcelona. She is well-known in the area of intelligent agents and multi-agent systems, artificial intelligence, human-robot interaction and affective computing. Her research is focused on the affective elements in the interactions between users and machines. She has (co)authored over 150 publications in refereed journals, conferences and books.

Academic Info and Highlights

Ana Paiva served as a member of numerous international conferences and workshops. She co-ordinated the GALA (2010-2014) and EMOTE (2013-2015) projects. She is member of the board of directors of the IFAAMAS organisation (The International Foundation for Autonomous Agents and Multiagent Systems) and member of the Global Agenda Council on Artificial Intelligence and Robotics of the World Economic Forum.

Miguel Filipe Leitão Pardal

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Research Areas and Interests

Miguel L. Pardal's current research interests are RFID and the Internet of Things, traceability systems, enterprise systems and distributed systems.

Academic Info and Highlights

Miguel L. Pardal recently completed his PhD on the subject of "Scalable and Secure RFID Data Discovery Services" advised by Prof. José Alves Marques (IST) and Prof. Sanjay Sarma (MIT). He is teaching Distributed Systems, Enterprise Systems' Integration, and Network and Computer Security. He received the "Excellence in Teaching at IST" award for Distributed Systems in 2014. Miguel was Demonstrations and Workshops co-chair of the 4th International Conference on the Internet of Things (IoT) 2014, held at MIT in Cambridge, MA, USA. Miguel is a member of Ordem dos Engenheiros, ACM and IEEE.

João Carlos Serrenho Dias Pereira

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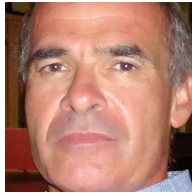


Research Areas and Interests

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

In 2014, he was responsible for the following courses: (i) Object Oriented Programming; (ii) Software Engineering; (iii) Software Quality.



João António Madeiras Pereira

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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.

Academic Info and Highlights

Representative of the Computer Graphics and Multimedia scientific area. Associate editor of the Journal of Real-Time Image Processing, Springer. Senior Member of the IEEE/Computer Society since August 2014. Member of International Program Committees: 9th International Conference on Computer Graphics Theory and Application, 5-8 January 2014 (GRAPP 2014); The 5th International Conference on Serious Games Development & Applications, 9-10 Oct 2014, Berlin (SGDA 2014). Teaches several courses in graphics visualization.



Ricardo Jorge Feliciano Lopes Pereira

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Research Areas and Interests:

Researcher at INESC-ID. Current research interests include peer to peer and overlay networks, Qos and network management, sensor networks, building automation systems

Academic Info and Highlights:

Participated in the CMU-Portugal Faculty Exchange program, visiting CMU for 4 months. Lead IST's participation in FP7 funded project CitySDK. Member of the TPC of Cognitive 2014, ICOIN 2015 and SAC 2015. Responsible for the Peer to Peer and Overlay Networks MSc level course.

Gabriel César Ferreira Pestana

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Research Areas and Interests

Researcher at INOV INESC Inovação, cooperating in activities of knowledge transfer. Promoter of applied research methodologies in the fields of knowledge management and collaborative decision making platforms. Study of business intelligence solutions in organizational contexts. Study of techniques and models related to data analytics, information semantic services and innovative graphical interfaces, study of business processes, stakeholder's role and characterization of business events.

Academic Info and Highlights

Participation as coordinator or as a project team member on national and international projects, namely: TURCare – Health Tourism R&D project, co-funded by the national QREN program; Active@Work – international R&D project approved by the Ambient Assisted Living Joint Programme; HandHold - HANDHeld Olfactory Detector, collaborative project from 7th Framework Program; SECAIR - Security on airport and other critical large infrastructure, EUROSTARS.

César Figueiredo Pimentel

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Research Areas and Interests

César Pimentel's research interests concern the fields of affective computing, agents and artificial intelligence, in general. The main focus of his research is on designing architectures and processes that capture the influence of affects on human cognition (including belief dynamics, reasoning and decision-making), with the aim of producing behaviour that is more credible and more effective.

Academic Info and Highlights

César Pimentel is a member of the Association for the Advancement of Affective Computing (humaine - AAAC). In 2014 he lectured the courses Logic for Programming and Autonomous Agents and Multi-Agent Systems.



Helena Sofia Andrade Nunes Pereira Pinto

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Research Areas and Interests

H. Sofia Pinto is a Senior Researcher at INESC-ID, in the Data Management and Information retrieval group (DMIR). Her research interests include knowledge representation, ontology engineering, semantic web, knowledge engineering and management, social networks and big data. She participated in several nationally-funded research projects on social networks, ontology alignment and merging, and big data: NetDyn, SOMER, SMARTIS, DataStorm.

Academic Info and Highlights

H. Sofia Pinto was DEI's coordinator for Interchange Programs: ERASMUS, SMILE, TIME, IS-LINK, as well as several interchange programs with Brazil. She was also coordinator under Erasmus Mundus for the WELCOME, Heritage, EuroEast and Namaste programs. She has served as project evaluator for the European Commission.



Maria do Rosário G. O. Bernardo Ponces de Carvalho

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Research Areas and Interests

Project, programme and portfolio management, in particular governance of projects.

Academic Info and Highlights

Currently teaching information systems project management for MEIC, POSI and CEPEI at IST, and as an invited professor at NOVA IMS. She is at conclusion phase of her PhD at Skema Business School under the theme Project Indicators for enhancing the Governance of Projects. Nominated for the IPMA (International Project Management Association) research management board for the period 2015-2017.

Rui Filipe Fernandes Prada

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Research Areas and Interest

Rui Prada is a senior researcher at INESC-ID in the Intelligent Agents and Synthetic Characters group where he develops his research in the creation of socially intelligent agents to improve user experience in interactive virtual environments and the design of engaging experiences for serious games.

Academic Info and Highlights

Rui Prada is the PI at INESC-ID of the research project RAGE recently approved in the Horizon 2020. He was appointed as program chair of the Virtual Agents track of the AAMAS'2015 conference and re-elected as president of the Sociedade Portuguesa de Ciências dos Videojogos. He was recipient of the 3rd prize for best paper in the Blue Sky Ideas track at AAMAS'2014, and of a fellowship at the Netherlands Institute for Advanced Study. He published the book "Design e Desenvolvimento de Jogos". He is the coordinator of the Memorandum of Understanding between INESC-ID and NII in Tokyo.

Pedro Manuel 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 run-time support.

Academic Info and Highlights

Author of *Compiladores: Da Teoria à Prática*, FCA 2014, ISBN 9789727227686, p.480.



Carlos Nuno da Cruz Ribeiro

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Research Areas and Interests

Carlos Ribeiro is working on computer security and computer forensics. Most of his research has been on three main subjects: i) authentication and authorisation; ii) intrusion detection; iii) electronic payment and voting.

Academic Info and Highlights

In 2014 Carlos Ribeiro was (i) pro-rector of University of Lisbon; (ii) subjects coordinator and teacher of Cyber-security Forensics (METI), Cyber Forensics (CESIDB) and Distributed Systems Security Protocols (DEIC, DEASegInf); (iii) co-coordinator of the PhD program of Information Security (DEASegInf); (iv) member of the executive board of EU large scale project Stork2.0; (vi) PC member of CMS 2014 is the 15th Joint IFIP TC6 and TC11 Conference on Communications and Multimedia Security .



Luís Eduardo Teixeira Rodrigues

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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 also serves as vice president of DEI, where he coordinates the PhD program in computer science and engineering. 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, and he is also a member of the management committee of the COST Action IC1001.

Paolo Romano

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Assistant Professor

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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 modeling of complex computing infrastructures.

Academic Info and Highlights

Paolo Romano is the chair of the COST Action Euro-TM, which brings together the leading European researchers in the area of transactional memory, from 17 European countries and over 60 institutions. In this area he has coordinated several European and national projects, and is currently leading a national project focused on energy efficiency. “Excellence in Teaching at IST” award recipient in 2014. Local chair for Euro-Par 2014 track on Parallel and Distributed Data Management.

Luís Manuel Silveira Russo

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Research Areas and Interests

Luís M. S. 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

Luís 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

Francisco C. Santos is interested in the development of simulation and modeling techniques, and their application to problems in social and life sciences. In particular, he addresses a wide range of complex systems topics, from cancer ecology and dynamics of human cooperation, to network science and climate governance.

Academic Info and Highlights

In the last year, Francisco C. Santos served as associate editor of *Minds and Machines* (Springer), *Scientific Reports* (Nature Pub. Group) and *PLoS Computational Biology* (as guest editor), and taught courses on Complex Networks Analysis, Algorithms and Data Structures, and Introduction to Programming.



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 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 2014: Mobile Computing, Architectures for Embedded Computing and Computer Organization.

José Alberto Rodrigues Pereira Sardinha

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Research Areas and Interests

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

Academic Info and Highlights

In 2014, Prof. Sardinha served on the program committee of ICEBE 2014, IATEM 2014, TADA/AMEC-14 at AAMAS-14, and MASGES 2014. He is also 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.

Alberto Manuel Rodrigues da Silva

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Research Areas and Interests

Alberto Silva is senior researcher at INESC-ID. His main research interests are in the areas of model-driven engineering, requirements engineering, software product lines, social computing, project management and alignment with methodologies and process management.

Academic Info and Highlights

Teaches IT Project Management, Systems Analysis and Modeling, and Information Systems Modeling. Coordinator of the Information Systems Group, and Vice-coordinator of the Information and Decision Support System Line of Action at INESC-ID. Program chair of QUATIC 2014 International Conference. PC Member of several international conferences. Coordinator of the RSLingo4Privacy and TT-MDE-Mindbury projects.



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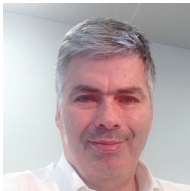
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Research Areas and Interests

Member of INESC-ID's Software Engineering group. Current 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 courses on software engineering and software architecture and received an "Excellence in Teaching at IST" award. Program co-chair of the QUATIC 2014 International Conference. 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.



Pedro Manuel Moreira Vaz Antunes de Sousa

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Research Areas and Interests

Pedro Sousa is a senior consultant at Link Consulting responsible for consultancy in professional projects for the past fifteen years. In the past six years he has been mostly dedicated to enterprise architecture projects in large organizations in the finance, telecommunication, retail and forest industries, in Portugal, Brazil and Central Europe. He has more than sixty international publications on the topics of enterprise architecture, information systems architecture and service oriented architectures.

Academic Info and Highlights

Pedro Sousa is responsible for enterprise architecture courses at IST for both the graduation and PhD programs. He is leader of Enterprise Cartography and EAMS

team (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, enterprise engineering and enterprise governance, with emphasis on IS architecture, business process engineering, enterprise transformation and change management.

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-INOV. Coordinator of POSI-E3, the professional postgraduate course in Information Systems and Enterprise Engineering of IST (3rd degree Bologna diploma). Teaching: Organizational Engineering (PDEI), Introduction to Computer Science and Engineering (LEIC), Seminars on Information and Enterprise Systems (Ead).

André Ferreira Ferrão e Couto e Vasconcelos

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Research Areas and Interests

André Vasconcelos' research interests include enterprise architectures and information systems architectures, namely: representation, modeling of information systems architectures, evaluation of architectures, with application in the Enterprise engineering domain. Currently, he develops specialized advisory activities in the information systems architecture domain in several projects such as the Global Plan for Rationalization and Cost Reduction on ICT in the Public Administration, the Citizen Card, the National Interoperability Platform, and the National Citizen Portal.

Academic Info and Highlights

In 2014 André was nominated by the Portuguese prime minister to lead the project group responsible for implementing the Global Plan for Rationalization and Cost Reduction on ICT in the Public Administration.



Andreas Miroslaus Wichert

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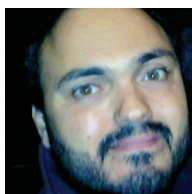
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Research Areas and Interests

Since 2006 Andreas Wichert is a researcher of INESC-ID. His research focuses on neuronal networks, cognitive systems, brain imaging, hierarchical indexing structures and quantum computation.

Academic Info and Highlights

Since 2009 he is a member of the Intelligent Agents and Synthetic Characters group (gaips).



Luís Manuel Antunes Veiga

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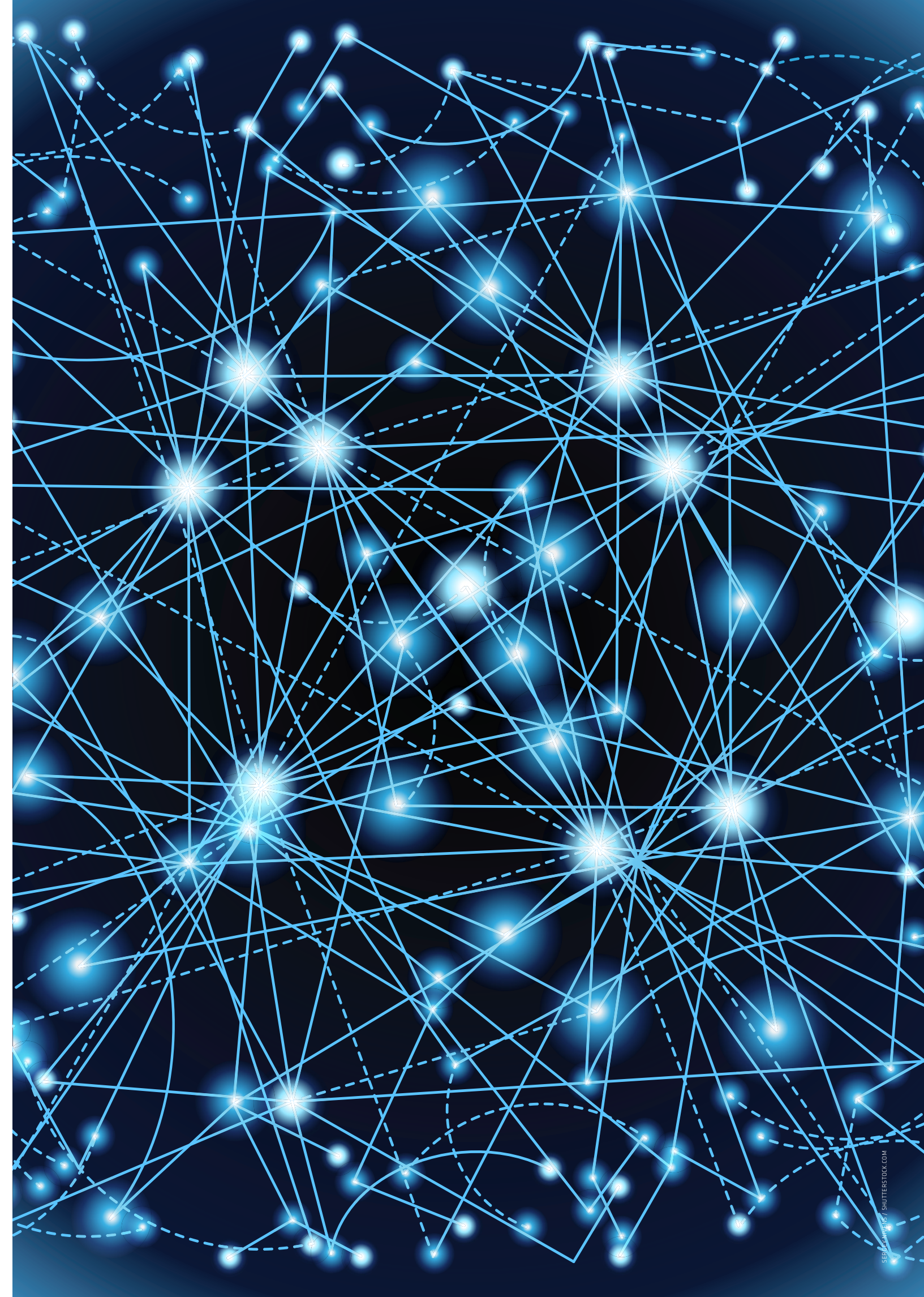
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Research Areas and Interests

Luís Veiga, senior researcher at INESC-ID, group manager of Distributed Systems group. Research interests: distributed systems, virtual machines, cloud and grid computing, peer-to-peer systems, data replication, mobile middleware.

Academic Info and Highlights

Local Coordinator of FP7 CloudForEurope project, participant in FP7 Timbus project on digital preservation and virtualization. He led two national research projects on P2P cycle-sharing and virtualization, and locally two 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 Chair, IEEE Computer Society Chapter, Section Portugal. "Excellence in Teaching at IST" award recipient in 2014. Best Researcher award at INESC-ID 2014. Local Chair, Euro-Par 2014 Track on Distributed Systems and Algorithms.



10. Selected Publications

P. Adão, P. Mateus, and L. Viganò. Protocol Insecurity with a Finite Number of Sessions and a Cost-Sensitive Guessing Intruder is NP-Complete. *Theoretical Computer Science*, 538, 2014. doi: 10.1016/j.tcs.2013.09.015

F. Afonso Raposo, R. Ribeiro and D. Martins de Matos. On the Application of Generic Summarization Algorithms to Music. *IEEE Signal Processing Letters*, IEEE, 22(1), 2015. doi: 10.1109/LSP.2014.2347582

L. Aksoy, P. Flores and J. Monteiro. Exact and Approximate Algorithms for the Filter Design Optimization Problem. *IEEE Transactions on Signal Processing*, 2014. doi: 10.1109/TSP.2014.2366713

L. Aksoy, P. Flores and J. Monteiro. Multiplierless Design of Folded DSP Blocks. *ACM Transactions on Design Automation of Electronic Systems*, 20(1), 2014. doi: 10.1145/2663343

D. Alistarh, O. Denysyuk, L. Rodrigues and N. Shavit. Balls-into-Leaves: Sub-logarithmic Renaming in Synchronous Message-Passing Systems. In proceedings of the 33rd ACM Symposium on Principles of Distributed Computing (PODC), 2014. doi: 10.1145/2611462.2611499

P. Alves and P. Ferreira. Radiator - Efficient Message Propagation in Context-Aware Systems. *Journal of Internet Services and Applications*, 5(4), (JISA), 2014. doi: 10.1186/1869-0238-5-4

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Annual Report 2014

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