



Departamento de Engenharia Informática

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DEI webpage:

<http://dei.fe.up.pt>

MIEIC webpage:

<http://www.fe.up.pt/mieic>

ProDEI webpages:

<http://www.fe.up.pt/prodei> and

<http://dei.fe.up.pt/prodei>

DEI seminars:

<http://dei.fe.up.pt/talks>



U. PORTO

FEUP FACULDADE DE ENGENHARIA
UNIVERSIDADE DO PORTO



DEI – Department of Informatics Engineering



About DEI

The activities in the area of Informatics Engineering started at FEUP in the beginning of 90's. The Department of Informatics Engineering (DEI) started formally its activities on January 1st, 2008. DEI includes a faculty staff of 41 members (34 hold a PhD) involved in the following scientific areas:

- **Computing Systems Architecture and Networks**
- **Computer Graphics, Human-Computer Interaction and Multimedia**
- **Information Systems**
- **Intelligent Systems**
- **Programming Fundamentals and Techniques**
- **Software Engineering**

DEI R&D Labs:

Most members of DEI do their research mainly at the following R&D Labs located at DEI:

- SAPO/U.Porto R&D Lab
- Artificial Intelligence R&D Lab - Robotics and Simulation
- Artificial Intelligence R&D Lab - Multi-Agent Systems
- Information Systems R&D Lab
- Computing Systems R&D Lab
- Graphics, Interaction and Games R&D Lab
- Software Engineering R&D Lab
- Digital Media R&D Lab
- Sound and Music Computing R&D Lab

A number of DEI members also participate in R&D projects at the following Research Units, funded by FCT (Portuguese Science Foundation):

- INEB – Institute of Biomedical Engineering (an unit part of the FCT Associate Laboratory: IBMC.INEB)
- INESC Porto, affiliated with INESC TEC - Institute for Systems and Computer Engineering of Porto (FCT Associate Laboratory)
- ISR - Institute for Systems and Robotics
- LIACC - Artificial Intelligence and Computer Science Laboratory
- LIAAD, affiliated with INESC TEC - Laboratory of Artificial Intelligence and Decision Support (affiliated to INESC-TEC)

SAPO/U.Porto R&D Lab

Coordinators: Eugénio Oliveira and Cristina Ribeiro ♦ **E-mail:** {eco, mcr}@fe.up.pt
Room: I124

The SAPO/U.Porto Lab hosts research in Information systems applications, including Collaborative and social computing systems and tools, Multimedia information systems, Data mining World Wide Web, including Web applications, Web searching and information discovery, web mining, web interfaces, and Information retrieval.

This Lab is the site of academic and research projects developed in cooperation with the SAPO/PT Comunicações company. Projects involve students, faculty and researchers from U.Porto units.

webpage: <http://labs.sapo.pt/category/labs/labsup/>

Artificial Intelligence R&D Lab - Robotics and Simulation

Coordinator: Rosaldo Rossetti ♦ **E-mail:** rossetti@fe.up.pt
Room: I120

This Artificial Intelligence Lab hosts research in Artificial intelligence and Robotics (including Robotic autonomy and planning), Applied Computing (including Operations research and Transportation), Simulation types and techniques (including modelling and simulation theory, Agent/discrete models and Distributed simulation, Social simulation and Behavioral modelling), Simulation support systems and evaluation, and Algorithmic game theory and mechanism design (including Convergence and learning in games) and Massively multiplayer online games.

The lab is the site of DEI researchers from the areas of Robotics and Team Coordination, Agent-based Intelligent Transportation Systems Simulation; Serious Games and Emotional Agents and Immersivity.

webpage: <http://paginas.fe.up.pt/~niadr/>

Artificial Intelligence R&D Lab - Multi-Agent Systems

Coordinator: Eugénio Oliveira ♦ **E-mail:** eco@fe.up.pt
Room: I121

This Artificial Intelligence Lab hosts research in Distributed Artificial Intelligence, including Multi-Agent systems, Intelligent Agents, Mobile Agents, Cooperation and Coordination, Planning and Scheduling.

The lab is the site of DEI researchers from the areas of Agent-based Interoperability, Multi-Agent Systems Infrastructures and Applications; Agent-based Modeling, Simulation and Network Analysis, and Text Mining.

webpage: <http://paginas.fe.up.pt/~niadr/>

Information Systems R&D Lab

Coordinator: Sérgio Nunes ♦ **Email:** sergio.nunes@fe.up.pt
Room: I123

The Information Systems Lab hosts research in Information systems, including data management systems, Information systems applications, Information Retrieval, Human-Centered computing, including Interaction design, Visualization, Collaborative and social, computing, Ubiquitous and mobile computing.

This lab includes around 10 faculty members and more than 20 PhD and MSc students. Research at the Lab focuses on a broad range of topics within the field of Information Systems, from information access to information storage and representation. In particular, the group has an active research agenda in the areas of multimedia databases, geographic information systems, information management, digital preservation, information search and retrieval, and digital repositories, as well as related activities in the area of human-centered computing, including interaction design, visualization, ubiquitous and mobile computing.

Computing Systems R&D Lab

Coordinator: João M.P. Cardoso ♦ **E-mail:** jmpc@fe.up.pt
Room: J204

The Computing Systems Lab hosts research in Computer systems organization (including Architectures, Embedded and Cyber-physical systems, Real-time systems, Dependable and fault-tolerant systems and networks), in Software organization and properties (Software system structures, Distributed systems organizing principles, Embedded software, and Real-time systems software), in Ubiquitous and mobile computing systems (Design and Evaluation methods) and tools, and in Software notations and tools (mostly on Compilers, Domain specific languages, and Specialized application languages).

This Lab is organized in three main research groups: SPECS: Special-Purpose Computing Systems, Languages and Tools, DECS: Distributed and Embedded Computing Systems, and Mobile and Distributed Computing. It hosts projects in the following areas: Domain-Specific Languages (DSLs), Compilers, Reconfigurable Computing (including FPGAs), High-Performance and Energy-Aware Embedded Computing, Distributed Computing, and Mobile Computing. At the moment the Lab hosts three faculty members, one postdoc, and seven PhD students.

webpage: <http://www.fe.up.pt/~specs/> (SPeCS Research Group)

Graphics, Interaction and Games R&D Lab

Coordinator: Rui Rodrigues ♦ **E-mail:** rui.rodrigues@fe.up.pt
Room: I220

The Graphics, Interaction and Games (GIG) Lab hosts research in Human-centered computing, including Human Computer Interaction, Interaction design, Ubiquitous and mobile computing, Visualization, Computer Graphics, including Animation, Rendering, Image manipulation, Graphics, Shape modeling, systems and interfaces.

This lab gathers a group of five senior researchers and more than 20 PhD, MSc and other junior researchers in the areas of computer graphics, human-computer interaction (HCI) and game design and development. Their research in computer graphics includes 3D modelling and high-quality rendering, real-time rendering and animation (2D and 3D), procedural generation of 2D and 3D environments (often associated with GIS applications), virtual and augmented reality, and GPU programming. In the field of HCI, there is a particular focus on user interaction and user experience, including interface and interaction design, multimodal interfaces, natural user interfaces, physical computing and usability. Many of these come together in game design and development, where the lab hosts a particular focus on serious games and gamification.

webpage: <http://fe.up.pt/gig>

Software Engineering R&D Lab

Coordinator: Rui Maranhão ♦ **Email:** rma@fe.up.pt
Room: I122

The Software Engineering Lab hosts research in software organization and properties, software notations and tools, software creation and management.

This lab hosts the Software Engineering Research Group, currently with 7 faculty members and more than 20 research students and grantees. The group's main mission revolves around the development of novel methods, techniques, and tools that advance the way in which software is designed, synthesized and assessed. In particular, the group focuses in the areas of software test automation, automatic fault localization and debugging, model-driven software engineering, software patterns and paradigms, software process improvement, and software knowledge management.

webpage: <http://softeng.fe.up.pt/SERGUP>

Digital Media R&D Lab

Coordinator: Raul Vidal ♦ **E-mail:** rmvidal@fe.up.pt
Room: J301

The Digital Media Lab hosts research in Applied Computing, including Arts and Humanities, Human-centered computing, including Human computer interaction, Interaction design, Ubiquitous and mobile computing, and Visualization.

This lab supports research activities in the scope of the Doctoral Program in Digital Media, integrating a multidisciplinary approach to problems devised in the scope of the digital media, namely Audiovisual and Interactive Content Creation, Industry, Publics and Markets, Journalism and Technology.

Sound and Music Computing R&D Lab

Coordinator: Raul Vidal ♦ **E-mail:** rmvidal@fe.up.pt
Room: I-104

The Sound and Music Computing Lab hosts research in applied computing, arts and humanities, and Sound and music computing.

This lab supports research not only in audio synthesis and computational processing of sound, but also in automatic and procedural music generation e.g., for usage in interactive computational systems, 3D audio specialization for integration in virtual environments, among other application contexts. It is highly prepared with sound and audio specific equipment, and acoustically prepared for the associated activities and for audio content production and post-production.