HUGO SERENO FERREIRA, PHD

BIRTH 7/1980   **E** HUGO.SERENO@FE.UP.PT   **T** 220301567   **ORCID.ORG**/0000-0002-4963-3525

Professor (9yrs) at FEUP, researcher (10yrs) and entrepreneur (5yrs) with 16+ years of professional experience, 35+ published works (*h-index 7*, *i10-index 7*), and 30+ degree-awarding (BSc, MSc, PhD) supervisions, focused in high-quality, adaptable, large-scale, *big-data* software solutions. His career encompasses projects for the portuguese and international military, local government and privately held businesses. Nowadays he focus on Object-Functional Programming, Architecture & Design Patterns, and Machine Learning. First student to be jointly awarded a Ph.D. (with *distinction*) in *Computer Science* by the Universities of Porto (UP), Minho (UM) and Aveiro (UA), he later held a *postdoc* research position at INESC TEC (1.5yrs) on *Large Scale Software Systems* for *Ambient Assisted Living*, where he is currently a *Research Associate*.

After receiving a *LicEng* degree in *Informatics and Computation Engineering*, he performed military R&D for the North Atlantic Treaty Organization (NATO) at *ParadigmaXis, S.A.* There he progressively assumed the roles of developer, team leader, software architect, and project manager in several government and privately held projects. Early 2011 he co-founded *Shiftforward*, an international strategy and technology consultancy company specialised in *big-data* software solutions for the *Online Advertising* industry, and acted as the Chief Technology Officer (CTO) until 2016 (5yrs), successfully raising 1M$ in funding.

His university teaching career started shortly after becoming a doctorate candidate in *meta-programming* and *model-driven software engineering* (2007), mainly at the Faculty of Engineering of the University of Porto (FEUP, since 2008), where he is currently an *Assistant Professor* (9yrs).

Professional experience

CURRENTLY HELD POSITIONS & AFFILIATIONS

★	2013 —	*Assistant Professor*, Faculty of Engineering, University of Porto { http://www.fe.up.pt }
★	2017 —	*Research Associate*, INESC TEC Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência

PAST EXPERIENCE IN ACADEMY

2016	*Collaborating Professor*, FCUP Faculty of Sciences, University of Porto { http://www.fc.up.pt }
2009 — 17	*Senior Researcher*, INESC TEC Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência
2008 — 13	*Assistant Lecturer*, FEUP Faculty of Engineering, University of Porto { http://www.fe.up.pt }
2011 — 13	*Collaborating Lecturer*, FLUP Faculty of Arts, University of Porto { http://www.letras.up.pt }
2011 — 12	*Postdoctoral Researcher*, INESC Instituto de Engenharia de Sistemas e Computadores do Porto
2011	*Guest Lecturer*, ISEP Instituto Superior de Engenharia do Porto { http://www.isep.ipp.pt }
2008	*Lecturer*, ISTEC Instituto Superior de Tecnologias Avançadas { http://www.istec.pt }

PAST EXPERIENCE IN INDUSTRY

2014 — 16	*Member of the Board of Directors & Shareholder*, Shiftforward, S.A. { http://shiftforward.eu }
2011 — 16	*Co-Founder & Chief Technology Officer* (CTO), Shiftforward, S.A. { http://shiftforward.eu }
2011	*Senior Architect*, ParadigmaXis - Arquitectura e Engenharia de Software, S.A.
2010 — 11	*Independent Consultant* working with Critical Software PT, Semasio DE, SAGE PT, Tectonic UK, etc.
2007 — 10	*Researcher*, ParadigmaXis - Arquitectura e Engenharia de Software, S.A.
2003 — 07	*Software Engineer*, ParadigmaXis - Arquitectura e Engenharia de Software, S.A.
2001 — 03	*Freelancer* in developing software solutions for medical healthcare and sports centers

Education

2007 — 11	PH.D. in Computer Science (w/ distinction), MAPI Joint Doctoral Programme, FEUP&FCUP UM UA
2006	LICENG in Informatics and Computation Engineering, FEUP

Grants, certifications, honors & awards

2012 Certification of *Functional Programming Principles in Scala* with *distinction*, by École Polytechnique Fédérale de Lausanne @ Coursera.

2012 Best paper award for Tiago Boldt Sousa, Hugo Sereno Ferreira, *"Object-Functional Patterns: Re-Thinking Development in a Post-Functional World"*, SEDES @ QUATIC 2012

2011 — 12 Postdoctoral research grant by INESC, *cf.* BPD/110054/CAALYX-MV_USIG

2007 — 11 Scholarship grant for doctoral studies by FCT, *cf.* SFRH/BDE/33298/2008

2009 Best paper award for Hugo Sereno Ferreira, Ademar Aguiar, João Pascoal Faria, *"Adaptive Object Modelling: Patterns, Tools and Applications"*, SEDES @ ICSEA 2009

2008 Best paper award for Hugo Sereno Ferreira, Filipe Correia, Leon Welicki, *"Patterns for Data and Metadata Evolution in Adaptive Object Models"*, PLOP @ OOPSLA 2008

2004 — 11 NATO-secret security clearance for military R&D

Publications   H-INDEX 7 · I10-INDEX 7 · CITATIONS 161

JOURNAL ARTICLES (PEER-REVIEWED)

2012 HH Nap, I Bierhoff, A Ferreiro, A Català, A Samà, C Gálvez-Barrón, A Rodríguez-Molinero, HS Ferreira, A Martins, M Antomarini, F Cesaroni, C Sdogati, L Carvalho, R Castro, J Spallek, *"Market driven implementation of the eCAALYX solution"*, Gerontechnology (12) Volume 2.

2010 Hugo Sereno Ferreira, Ademar Aguiar, João Pascoal Faria, *"Adaptive Object-Models: A Research Roadmap"*, International Journal On Advances in Software, Vol 3.

CONFERENCE ARTICLES (PEER-REVIEWED)

★ 2017 Tiago Boldt Sousa, Hugo Sereno Ferreira, Filipe Figueiredo Correia and Ademar Aguiar, *"Engineering Software for the Cloud: Message Queues and Logging"*, Proceedings of the 22nd European Conference on Pattern Languages of Programs (EUROPLOP-2017). Bavaria, Germany. *To appear.*

★ 2017 Duarte Duarte, Hugo Sereno Ferreira, João Dias and Zafeiris Kokkinogenis, *"Towards a Framework for Agent-based Simulation of User Behaviour in E-Commerce Context"*, Proceedings of the 15th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS-2017). Porto, Portugal. *To appear.*

★ 2017 João Pedro Dias, Hugo Sereno Ferreira, *"Automating the Extraction of Static Content and Dynamic Behaviour from e-Commerce Websites"*, Proceedings of the 8th International Conference on Ambient Systems, Networks and Technologies (ANT-2017). Madeira, Portugal. *To appear.*

2016 Tiago Sousa, Hugo Sereno Ferreira, Filipe Correia, *"Engineering Software for the Cloud - Patterns and Sequences"*, Proceedings of the 11th Latin American Conference on Pattern Languages of Programs (SUGERLOAF PLOP 2016). Buenos Aires, Argentina.

2015 Filipe Oliveira, Hugo Sereno Ferreira, Tiago Boldt Sousa, *"Exploring the Scala Macro System for Compile Time Model-Based Generation of Statically Type-Safe REST Services"*, Proceedings of the 2nd International Conference on Advances and Trends in Software Engineering (ICSE-2015). Lisbon, Portugal.

2015 Tiago Boldt Sousa, Filipe Correia, Hugo Sereno Ferreira, *"DevOps patterns for software orchestration on public and private clouds"*, Proceedings of the 22nd Conference on Pattern Languages of Programs (PLOP-2015). Pittsburgh, Pennsylvania, USA.

2014 Luís Fonseca, Tiago Boldt Sousa, Hugo Sereno Ferreira, *"Rapid Prototyping and Development Framework for Android with Scala"*, Proceedings of the 6th Symposium on Informatics. Porto, Portugal.

2014 Omar Castro, Hugo Sereno Ferreira, Tiago Boldt Sousa, *"Collaborative Web Platform for UNIX-based Big Data Processing"*, Proceedings of the 11th International Conference on Cooperative Design, Visualization and Engineering (CDVE-2014). Seattle, USA. Lecture Notes in Computer Science 8683.

2014 Nuno Flores, Ademar Aguiar, Hugo Sereno Ferreira, *"The Concept of Ba Applied to Software Knowledge"*, Proceedings of the 7th International Workshop on Cooperative and Human Aspects of Software Engineering.

2013 Bruno Ferreira, Vânia Guimarães, Hugo Sereno Ferreira, *"Smartphone Based Fall Prevention Exercises"*, Proceedings of the 15th IEEE International Conferences on e-Health Networking, Application & Services (HEALTHCOM

2013). Lisbon, Portugal.

2013   Angelo Martins, Tiago Boldt Sousa, João Pascoal Faria, Hugo Sereno Ferreira, *"Architecture for an AAL Ecosystem"*, Proceedings of the 6th International C* Conference on Computer Science & Software Engineering. Porto, Portugal.

★ 2012   Tiago Boldt Sousa, Hugo Sereno Ferreira, *"Object-Functional Patterns: Re-Thinking Development in a Post-Functional World"*, Proceedings of the 8th International Conference on the Quality of Information and Communications Technology (SEDES-2012). Lisbon, Portugal. *Best Paper Award.*

2012   Sandra Prescher, Alan Bourke, Friedrich Koehler, Angelo Manuel Martins, Hugo Sereno Ferreira, Tiago Boldt Sousa, Rui Castro, António Santos, Marc Torrent Poch, Sergi Gomis Gascó, Hospedales Margarita, John Nelson, *"A Ubiquitous Ambient Assisted Living Solution to Promote Safer Independent Living in Older Adults Suffering from Co-morbidity"*, Proceedings of the 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC-2012). California, USA.

2012   Hugo Sereno Ferreira, Tiago Sousa, Angelo Martins, *"Scalable Integration of Multiple Health Sensor Data for Observing Medical Patterns"*, Proceedings of the 9th International Conference on Cooperative Design, Visualization and Engineering (CDVE-2012). Osaka, Japan. Lecture Notes in Computer Science 7467.

2012   Tiago Almeida, Hugo Sereno Ferreira, Tiago Sousa, *"A collaborative expandable framework for end-users and programmers"*, Proceedings of the 9th International Conference on Cooperative Design, Visualization and Engineering (CDVE-2012). Osaka, Japan. Lecture Notes in Computer Science 7467.

2011   Patricia Matsumoto, Eduardo Guerra, Hugo Sereno Ferreira, Filipe Correia, Joseph Yoder, Ademar Aguiar, *"AOM Roles Metadata Mapping"*, Proceedings of the 18th Conference on Pattern Languages of Programs (PLOP-2011). Oregon, USA.

2011   Hugo Sereno Ferreira, Filipe Correia, Ademar Aguiar, Joseph Yoder, *"The Lazy Semantics Pattern on the context of Meta-Architectures"*, 2nd Asian Conf. on Pattern Languages of Programs (ASIANPLOP-2011). Tokyo, Japan.

2010   Hugo Sereno Ferreira, Filipe Correia, Joseph Yoder, Ademar Aguiar, *"Core Patterns of Object-Oriented Meta-Architectures"*, Proceedings of the 17th Conference on Pattern Languages of Programs (PLOP-2010). Nevada, USA.

2010   Marco Cunha, Ana Paiva, Hugo Sereno Ferreira, Rui Abreu, *"PETTool: A Pattern-Based GUI Testing Tool"*, 2nd International Conference on Software Technology and Engineering (ISCTE-2010). Puerto Rico, USA.

2009   Gabriela Soares, Rosaldo Rossetti, Nuno Flores, Ademar Aguiar, Hugo Sereno Ferreira, *"A Cooperative Personal Agenda in a Collaborative Team Environment"*, Proceedings of the 6th International Conference on Cooperative Design, Visualization and Engineering (CDVE-2009). Lecture Notes in Computer Science 5738.

2009   António Rito Silva, David Martinho, Ademar Aguiar, Nuno Flores, Filipe Correia, Hugo Sereno Ferreira, *"An Implementation Model for Agile Business Process Tools"*, International Workshop on Organizational Design and Engineering, Portugal.

2009   Hugo Sereno Ferreira, Filipe Correia, Ademar Aguiar, *"Design for an Adaptive Object-Model Framework: An Overview"*, Proceedings of the 4th International Workshop on Models@runtime, Denver, Colorado, USA.

2009   Filipe Correia, Hugo Sereno Ferreira, Nuno Flores, Ademar Aguiar, *"Patterns for Consistent Software Documentation"*, Proceedings of the 16th Conference on Pattern Languages of Programs, Chicago, Illinois, USA.

★ 2009   Hugo Sereno Ferreira, Ademar Aguiar, João Pascoal Faria, *"Adaptive Object Modelling: Patterns, Tools and Applications"*, 3rd Symposium on Doctoral Students of Software Engineering. Proceedings of the 4th International Conference on Software Engineering Advances, Porto, Portugal. *Best Paper Award.*

2009   Filipe Correia, Hugo Sereno Ferreira, Nuno Flores, Ademar Aguiar, *"Incremental Knowledge Acquisition in Software Development Using a Weakly-Typed Wiki"*, Proceedings of the 5th International Symposium on Wikis and Open Collaboration, Orlando, Florida, USA.

★ 2008   Hugo Sereno Ferreira, Filipe Correia, Leon Welicki, *"Patterns for Data and Metadata Evolution in Adaptive Object Models"*, Proceedings of 15th Conference on Pattern Languages of Programs, Nashville, Tennessee, USA. *Best Paper Award.*

2008   Filipe Correia and Hugo Sereno Ferreira, *"Trends on Adaptive Object-Model Research"*, Proceedings of the 3rd Edition of the Doctoral Symposium in Informatics Engineering, Porto, Portugal.

TECHNICAL WHITEPAPERS

2012   Paulo Cunha, André Silva, João Azevedo, Hugo Sereno Ferreira, *"AdStress: The Online Advertising Stress Testing Platform"* { http://goo.gl/XL20R }.

2012   Paulo Cunha, João Azevedo, André Silva, Hugo Sereno Ferreira, *"AdForecaster: Predict Your Campaign Ad Impressions in Seconds"* { http://goo.gl/dPwr0 }.

OTHERS

2017   João Pedro Dias, Hugo Sereno Ferreira, *"Automating the Extraction of Static Content and Dynamic Behaviour from e-Commerce Websites"*, Proceedings da 10ª Edição Encontro Investigação Jovem (IJUP-2017). Porto, Portugal.

2016   João Silva, Hugo Sereno Ferreira, *"Bluetooth Based Warning System for Ambient Assisted Living"*, Proceedings da 9ª Edição Encontro Investigação Jovem (IJUP-2016). Porto, Portugal.

2012   Filipe Correia, Nuno Flores, Hugo Sereno Ferreira, Ademar Aguiar, *"Assessing Tools for Software Development: An overview of three user evaluations"*, User evaluation for Software Engineering Researchers (USER) Workshop at the 34th International Conference on Software Engineering.

2012   Hugo Sereno Ferreira, *"Introdução à Programação Objecto-Funcional com Scala"*, MundoJ 53.

2011   Michel Wermelinger, Hugo Sereno Ferreira, *"Quality evolution track at QUATIC'10"*, ACM SIGSOFT Software Engineering Notes, p. 28.

DISSERTATIONS

2010   Adaptive Object-Modeling: Patterns, Tools and Applications. *PhD dissertation*

2004   Framework for Development of Command & Control Systems. *LicEng dissertation*

Invited talks, Shows & Interviews

2015   *Uber e Negócios Online*, Jornal da Noite @ RTP2

2015   *The Peter Fatality: Why People Rise to the Level of their Incompetence*, Panel @ Commit Porto, Faculty of Engineering, University of Porto

2015   *ShiftForward*, JobIT 2015, Faculty of Engineering, University of Porto

2015   *Software and Services*, Panel, 8th Congress on Services and Management Engineering (CESG 2014)

2014   *ShiftForward*, JobIT 2014, Faculty of Engineering, University of Porto

2014   *Computer Science Challenges from the Industry*, Panel, INForum 2014, Porto

2014   *Why Post-Functional Programming Matters*, Ripple Conference 2014, Porto

2013   *Workshop: Introduction to Scala*, Faculty of Engineering, University of Porto

2013   *Interview with ShiftForward*, TSF Mundo Novo (radio program on entrepreneurship)

2013   *Why Post-Functional Programming Matters*, 8th National Meeting of Informatics Students (ENEI 2013)

2013   *Shiftforward – Lessons Learned in Entrepreneurship*, Beta-Talk Porto, Facts Coworking

2012   Episode *"What's a Programming Language?"* in *One Minute Engineering* { paginas.fe.up.pt/~engmin }

2011   *Incomplete by Design*, Inside Awareness, Faculty of Engineering, University of Porto

2009   *Causal Connections*, Models@Runtime Workshop, Denver, Colorado, USA

2009   *Pattern Languages*, Seminários Ortogonais, Faculty of Sciences, University of Porto

2008   *The Path to Abstraction*, Instituto Superior de Tecnologias Avançadas

Educational services

PHD IN INFORMATICS ENGINEERING SUPERVISING · PRODEI · FEUP

★ 2011 —   Tiago Boldt Sousa, *Engineering Software for the Cloud*.

★ 2017 —   João Pedro Dias, *Towards a Reference Architecture for Orchestrating Large-Scale Internet of Things' Systems using Visual Programming Languages. To start in September 2017.*

MASTER DEGREE IN INFORMATICS ENGINEERING SUPERVISING · FEUP

2017 —   Rui Figueira, *Data ingestion framework using Spark Streaming* at FARFETCH.

2017 —   João Cardoso, *IM2HoT: Interactive Machine-Learning to improve the House of Things* at FEUP.

2017 —   André Humberto Morais, *2HoT4All: Highly-scalable House of Things for All* at FEUP.

2016 —   Maria João Miranda, *Exploring Visual Programming Patterns from the End-User Perspective* at FEUP.

2015 — 16   Carlos Teixeira, *DevOps: Pratices, Patterns and Tools* at FEUP.

2015 — 16   Gabriel Candal, *Exploring Visual Programming Concepts for Probabilistic Programming Languages* at FEUP.

2015 — 16   Pedro Fernandes, *Framework for Monte Carlo Tree Search-related strategies in Competitive Card Based Games* at FEUP.

2015 — 16   Duarte Duarte, *Framework for Multi-Agent Simulation of User Behavior in E-Commerce Sites* at SHIFTFORWARD.

2015 — 16   João Pedro Dias, *Reverse Engineering Static Content and Dynamic Behaviour of E-Commerce Sites for Fun and Profit* at SHIFTFORWARD.

2014 — 15   Filipe Oliveira, *Exploring Macros for Model-Based Generation of Type-safe REST services in Scala* at FEUP.

2013 — 14   Luís Fonseca, *Exploring Rapid Application Development for Android with Scala and SBT* at INESC TEC.

2013 — 14   Bruno Maia, *Transformation Patterns for a Reactive application* at BLIP.

2013 — 14   Omar Castro, *Shellhive: Towards a Collaborative Visual Programming Language for UNIX Workflows* at FEUP.

2013 — 14   Jorge Silva, *The Road to Enlightenment: Generating Insight and Predicting Consumer Actions in Digital Markets* at SHIFTFORWARD.

2013 — 14   João Quarteu, *Towards a Self-Managed Framework for Orchestration and Integration of Devices in AAL* at INESC TEC.

2012 — 13   João Figueiredo, *Modularization of Large Web Applications* at BLIP.

2012 — 13   Carlos Babo, *Generic and parameterizable service for remote configuration of mobile phones using Near Field Communication* at Fraunhofer AICOS.

2012 — 13   Bruno Ferreira, *Smartphone Based Fall Prevention Exercises* at Fraunhofer AICOS.

2012 — 13   Vasco Grilo, *Towards a Live Development Environment* at FEUP.

2011 — 12   Tiago Almeida, *End-User Programming In Mobile Devices through Reusable Visual Components Composition* at FEUP.

2011 — 12   Jorge Mateus, *Agile Business Intelligence Using Microsoft® SharePoint* at CRITICAL MANUFACTURING.

2011 — 12   Inês Carvalho, *Espresso Medical Systems* at SCIONIS.

2010 — 11   André Carmo, *Introducing End-User Reconfiguration on Clinical Knowledge Information Systems* at CRITICAL SOFTWARE, S.A.

2010 — 11   Marcelo Cerqueira, *Ambiente de Modelação e Configuração de Processos* at SIEMENS S.A.

MASTER DEGREE IN ELECTRICAL AND COMPUTER ENGINEERING SUPERVISING · FEUP

2014 — 15   João Silva, *Bluetooth based Warning System for Ambient Assisted Living* at Fraunhofer AICOS.

MASTER DEGREE IN INFORMATICS ENGINEERING CO-SUPERVISING · FEUP

★ 2015 —   Miguel Oliveira, *Ranking Personal Information* at MAILCUBE. Supervised by *Prof. Ademar Aguiar*.

2015 — 16   André Silva, *Email clustering and classification: A Case Study* at MAILCUBE. Supervised by *Prof. Ademar Aguiar*.

2013 — 14   Pedro Borges, *Online Advertising: Forecasting and Synthesising Web Activity Based On Historical Data* at SHIFTFORWARD. Supervised by *Prof. João Mendes Moreira*.

2009 — 10   João Gradim Pereira, *Improving Variability of Applications using Adaptive Object-Models* at Tecla Colorida, Lda. Supervised by *Prof. Ademar Aguiar*.

BACHELOR DEGREE IN INFORMATICS ENGINEERING CO-SUPERVISING · ISEP

2012   Diogo Silva, *Desenvolvimento de Aplicação Android para Monitorização de Idosos* at INESC. Supervised by *Prof. Angelo Martins*.

2012   Vítor Moreira, *Desenvolvimento de Aplicação Android para Monitorização de Idosos* at INESC. Supervised by *Prof. Angelo Martins*.

2012 — 13   Luís Fonseca, *Object-Functional Pattern Variants of Adaptive Object-Models* at INESC TEC.

OTHER EDUCATIONAL & TEACHING SERVICES

2015   Juror, Tiago Sousa, *"Raise of the Dead"*. Professional Aptitude Evaluation at *Escola Secundária Filipa de Vilhena*.
2015   Juror, Bruno Jesus, *"Medionics: Um site dinâmico"*. Professional Aptitude Evaluation at *Escola Secundária Filipa de Vilhena*.
2014 — 17   Organizer, *"My first 3D film"*, 1st , 2nd , 3rd and 4th editions. An introduction to visual programming languages using Alice, ages 12–15 @ Universidade Júnior
2013 — 14   Organizer, *"Mummy, daddy, I shrunk my computer!!!"*. 1st and 2nd editions. An introduction to the RaspberryPI, electronics and programming, ages 12–15 @ Universidade Júnior
2010   Organizer and Lecturer, *"An Introduction to UML 2.x"*. 10 students @ Criticial Software, S.A.

Scientific services

DEGREE-AWARDING JURIS IN INFORMATICS ENGINEERING (EXCLUDING SUPERVISING JURIS) · FEUP

2017   *Chair, MSc.* João Oliveira, *Workflow engine for parallel batch processing*
2017   *Chair, MSc.* Pedro Dias Faria, *Test Automation in Continuous Integration for Hardware Validation*
2016   *Chair, MSc.* Luís Amaro, *Sistema de Recomendação de Acções de Melhoria Baseado em Crowd-Sourcing e Aprendizagem Automática*
2016   *Chair, MSc.* Tiago Coelho, *Automação de Testes de Aplicações Móveis sem Necessidade de Programação*
2016   *Chair, MSc.* Vasco Gomes, *Improving Courses Management by Predicting Number of Students*
2015   *Chair, MSc.* Jorge Costa, *A Multi-Objective Approach to Test Suite Reduction*
2015   *Chair, MSc.* Paulo Freitas, *Software Repository Mining Analytics to Estimate Software Component Reliability*
2014   *Chair, MSc.* Daniela Cardeano, *Data Mining em aplicações de Desenho Racional de Fármacos*
2014   *Chair, MSc.* Tiago Mota, *Identificação e Quantificação de Células Oncocíticas em Imagens Microscópicas*
2014   *Chair, MSc.* João Ponte, *Deteção de falhas em Servidores de Video on Demand*
2014   *Chair, MSc.* Bruno Fernandes, *Improving Software Project Estimates Based on Historical Data*
2014   *Chair, MSc.* Linda Padilla, *Transformation of Business Process Models: A Case Study*
2013   *Juror, PhD.* Fernando Sérgio Barbosa, *Generic Roles: Reducing Code Replication*
2013   *Chair, MSc.* Angela Igreja, *AngelMail: an integrated solution for prioritization, visualization and organization of email*
2011   *Chair, MSc.* Tiago Carvalho, *A Meta-Language and Framework for Aspect-Oriented Programming*
2011   *Chair, MSc.* João Antunes, *Desenvolvimento e integração de editores gráficos de elevado impacto visual*

OTHER DEGREE-AWARDING JURIS

2016   *Main Juror, MSc.* Rúben Barros, *DevOps Technologies for Tomorrow* at ISEP. Supervised by *Prof. Angelo Martins*.
2015   *Main Juror, MSc.* Carlos Caldas, *anoBusiness - ferramenta de BPM* @ FCUP.

GRANT COMMITEES & SCHOLARSHIP SUPERVISIONS

2017   Research grant, *NanoSTIMA RL3-2, cf. AE2017-0051*. 12mo @ INESC TEC
2012   Research grant, *Ambient Assisted Living for All*. 18mo @ INESC TEC
2012   Scientific Initiation grant, *Object-Functional Pattern Variants of AOMs*. 3mo @ INESC TEC

PROGRAM COMMITEES & REVIEWS

2017   *PC Member.* 8th Agile Portugal (APT 2017).
2017   *Reviewer.* 22nd European Conference on Pattern Languages of Programs (EUROPLOP 2017)
2016   *Reviewer.* *"Pervasive and Mobile Computing Journal"*, Elsevier (ISSN 1574-1192).
2015   *Technical Review.* DeVore & Walsh, *"Reactive Application Development"*, Manning Publications Co.

2015	*PC Member.* 6th Brazilian Workshop on Agile Methods (WBMA @ AGILE BRAZIL 2015)
2014	*PC Member.* 10th Latin-American Conf. on Pattern Languages of Prog. (SUGARLOAFPLOP 2014)
2014	*PC Member.* Software Engineering and Science track at the 6th Symposium on Informatics. (SOFT-PT @ INFORUM 2014)
2014	*PC Member.* 9th Int. Conf. on the Quality of Information and Communications Tech. (QUATIC 2014)
2014	*PC Member.* Workshop of Agile Software Development Techniques at the 14th International Conference on Computational Science and its Applications (ICCSA 2014)
2013	*PC Member.* 5th Int. Workshop on Flexible Modeling Tools (FLEXITOOLS @ SPLASH 2013)
2013	*PC Member.* MiniPLoP Brasil IME/USP
2013	*Reviewer.* 18th European Conference on Pattern Languages of Programs (EUROPLOP 2013)
2013	*Technical Review.* Alvin Alexander, *"Scala Cookbook"*, O'Reilly Media, Inc.
2013	*PC Member.* Wavefront Experience at the 4th annual SPLASH conference
2012	*Reviewer.* IEEE Transactions on Software Engineering (TSM)
2012	*PC Member.* 8th Int. Conf. on the Quality of Information and Communications Tech. (QUATIC 2012)
2012	*Reviewer.* 19th Conference on Pattern Languages of Programs (PLOP 2012)
2012	*PC Member.* Doctoral Symposium in Informatics Engineering (DSIE 2012)
2011	*PC Member.* 2nd International Summer School on Domain Specific Modeling
2011	*PC Member.* 18th Conference on Pattern Languages of Programs (PLOP 2011)
2011	*PC Member.* Model Driven Engineering (ECM/MDE, INFORUM 2011)
2011	*PC Member.* MiniPLoP Brasil IME/USP
2011	*Reviewer.* 16th European Conference on Pattern Languages of Programs (EUROPLOP 2011)
2011	*Reviewer.* IEEE Software
2010	*PC Member.* 6th Int. Conf. on the Quality of Information and Communications Tech. (QUATIC 2010)
2010	*Reviewer.* 17th Conference on Pattern Languages of Programs (PLOP 2010)
2010	*Reviewer.* 15th European Conference on Pattern Languages of Programs (EUROPLOP 2010)

OTHER JURIS

2017	*Juri* at the Spark Agency's "Pitch Bootcamp FEUP 2017", FEUP, Porto, Portugal.
2016	*Project Reviewer* for the Portugal Ventures' "Call on Entrepreneurship".

CONFERENCE ORGANIZATION

2017	*Scientific Committee.* Inter-University Programming Marathon (MIUP 2017), Braga@UM, Portugal.
2016	*Scientific Committee.* Inter-University Programming Marathon (MIUP 2016), Lisboa@FCT/UNL, Portugal.
2015	*Scientific Committee.* Inter-University Programming Marathon (MIUP 2015), Porto@FCUP, Portugal.
2014	*Chair.* Inter-University Programming Marathon (MIUP 2014), Porto@FEUP, Portugal.
2010 — 12	*Co-Chair.* 1st , 2nd and 3rd Agile Portugal.
2010	*Co-Organizing Chair.* Quality Evolution in ICT Track of the 7th International Conference on the Quality of Information and Communications Technology (QUATIC 2010).
2008	*Student Volunteer.* 23rd Annual ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2008).
2008	*Student Volunteer.* 15th Conference on Pattern Languages of Programs (PLOP 2008).

AFFILIATIONS

★ 2009 —	*Member.* The International Hillside Group is an educational non-profit organization, that sponsors and helps running various conferences (PlopConference, EuroPlop, ChiliPlop, KoalaPlop, Mensore PLoP, SugarloafPLoP, and UP97) and has been responsible for getting the *Pattern Languages Of Program Design* series of books put together and published
★ 2008 —	*Member.* Software Engineering Group at Faculty of Engineering, University of Porto

★ 2013 —   ACM ICPC *Trainer.* International collegiate programming contest trainer of FEUP teams.
★ 2011 —   *Head of Laboratory.* Masters in Informatics and Computation Engineering Student's Lab FEUP.
2015 — 16   *Advisor* for the "Founders Founders" co-working space.
2012 — 13   Self-assessment Committee for the A3ES accreditation of the MIEIC course at FEUP.
2011 — 12   Self-assessment Committee for the EUR-ACE accreditation of the MIEIC course at FEUP.
2010   *Juror.* BEST – Days on Technology 2010 at FEUP.

Main Projects

RESEARCH PROJECTS

2011 — 14   AAL4ALL: AMBIENT ASSISTED LIVING FOR ALL, INESC PORTO, €8.18m *cf.* QREN 13852
Senior Researcher. A mobilizing project for an industrial ecosystem of products and services in the scope of Ambient Assisted Living (AAL), focused on the definition of specific standards.

2011 — 13   CAALYX-MV: COMPLETE AAL MARKET VALIDATION, INESC PORTO, €3.91m *cf.* ICT-PSP — 09-3-250577
Senior Researcher. An european project to widely validate an innovative and efficient ICT-based solution focused on improving the quality of life of the elderly through wearable light devices.

2011 — 12   ECAALYX: ENHANCED AAL, INESC PORTO, €2.7m *cf.* AAL-010000 — 09-13
Senior Researcher. Three-year project funded by the European Commission under the AAL Joint Programme (Strategic Objectives addressed: ICT-based Solutions for Prevention and Management of Chronic Conditions of Elderly People). The project builds on the strengths of the infrastructure and functionality already developed in the original CAALYX project (2007/2008).

MILITARY RESEARCH & DEVELOPMENT

2004 — 05   MRS: MIP REFERENCE SYSTEM, NC3A
Architecture, design and implementation of the MIP reference system for LC2IDEM data replication, used by the NATO R&D Agency, and to which the alliance implementations have to comply.

2003 — 04   MIPX: FRAMEWORK FOR DEVELOPMENT OF COMMAND AND CONTROL SYSTEMS, NC3A
Architecture, design and implementation of an infrastructure to develop LC2IDEM-based Command and Control Systems.

RESEARCH PROJECTS WITHIN COMMERCIAL ENVIRONMENT

2012 — 16   AD-FORECASTER, SHIFTFORWARD *cf.* SIFIDE 0694/2013-E { http://www.adforecaster.com }
Chief Technology Officer (CTO). A next-generation forecasting engine for online ad campaigns that overcomes key limitations of existing forecast engines, by allowing accurate prediction of future ad impressions traffic levels and campaign inventory availability using unlimited number of targeting variables, including geo, keywords, key-values, cookies, and multiple frequency capping groups at banner, booking, line item or campaign level. Technologies: Scala, Akka, JVM, Amazon EC2.

2012 — 13   AD-STRESS, SHIFTFORWARD *cf.* SIFIDE 0694/2013-E { http://www.adstress.com }
Chief Technology Officer (CTO). A platform that effeciently simulates complete browser interactions with advertising platforms at a very large scale (over 100m unique users) with multiple interactions with the system. It can also simulate server-to-server connections for testing RTB Clients and Servers at very high requests per second (over 50k). Technologies: Scala, Akka, JVM, Amazon EC2.

2007 — 10   OGHMA, PARADIGMAXIS *cf.* SFRH/BDE/33298/2008
One of the results from my Ph.D. work, it is the current main infrastructure of several production-level Information Systems developed at ParadigmaXis, including Locvs, Zephyr and GISA. Technologies: C#, SQLite, XML.

COMMERCIAL PROJECTS

2014 — 16   AD-STAX, SHIFTFORWARD { http://www.adstax.com }
Chief Technology Officer (CTO). Adstax is a scalable, real-time advertising platform-as-a-service, fully customisable and API-accessible, that enpowers a company to integrate 1st and 3rd party technologies within its walled garden.

2012   RE-ENGINEERING OF MEDICAL SOFTWARE, IM3DICAL
Project Leader and Senior Consultant for IM3DICAL re-engineering of its medical software for Mac OSX and iOS platforms. Technologies: Objective-C, XML.

2012   HL7 INTEGRATION, IM3DICAL
Project Leader and Senior Consultant for IM3DICAL integration with HL7, developed at INESC Porto. Technologies: Microsoft® BizTalk, XML, HL7, MLLP.

2011 — 11   COOLBIZ: TRADING SYSTEM, BANCO CARREGOSA
Software Quality Engineer for a back-end and front-end financial trading system for *Banco Carregosa*, developed at ParadigmaXis. Technologies: C++, Apache QPID, AMQP, QT, XML.

2009 — 10   SMQVU: URBAN LIFE QUALITY, CMP
Analysis and development of an Information System for *Câmara Municipal do Porto – Gabinete de Estudos e Projectos*. Supports the assessment of urban life quality attributes of the city of Porto, by providing a centralized tool to collect, analyze and synthesize statistical data over hundreds of indexes. Technologies: C#, WPF, Oracle database 11g, SQLite, QT, XML.

2007 — 10   LOCVS: ARCHITECTURAL AND ARCHAEOLOGICAL HERITAGE, CMP
Analysis and development of an Information System for *Câmara Municipal do Porto, Departamento Municipal do Património e Cultura*. It supports the full workflow of collection, process, analysis and storage of textual, graphical and geospatial heritage information of the city of Porto. Technologies: C#, WPF, Oracle database 11g, SQLite, ARCGIS, XML.

2006 — 07   GEOXIS: GEO-SPATIAL BACK-END FRAMEWORK AND INFRASTRUCTURE, PARADIGMAXIS
Design and implementation of an infrastructure for displaying and analysing geospatial data. Used by several partners including (but not limited to): Vodafone, Portugal Telecom, Optimus, Clix and ITP. Technologies: Python, C++, C#, HTML5, Javascript, PostgreSQL, PostGIS, XML.

2005 — 06   MAPADVENTURE, PARADIGMAXIS { http://www.mapadventure.com.pt }
Design and implementation of an application and infrastructure for displaying and using military cartography in mobile devices, intented for sports and leisure activities in the wild. The system was developed in cooperation with Infoportugal and IGeOE. Technologies: C++, C#.

Teaching

INTEGRATED MASTER IN INFORMATICS AND COMPUTING ENGINEERING · FEUP · 5 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
MADS	Agile Software Development Methodologies	·	·	·	·	●	●	●	·	·	·
DISS	Dissertation	·	·	·	●	●	●	●	●	●	●
SDIS	Distributed Systems	·	·	·	·	·	·	·	·	●	●
MFES	Formal Methods in Software Engineering	·	●	●	●	·	·	·	●	●	●
LPOO	Object-Oriented Programming Laboratory	·	·	·	●	·	·	●	·	●	●
SOPE	Operating Systems	·	·	●	·	·	·	·	·	●	·
LGPR	Project Management Laboratory	·	·	·	●	·	·	·	●	·	●
ASSO	Software Architecture	·	·	·	·	·	·	·	·	·	●
ESOF	Software Engineering	·	●	·	·	·	●	●	●	●	●
LDSO	Software Engineering Laboratory	·	●	·	·	·	·	·	·	●	·
SESI	Software Engineering Seminars	·	·	·	·	●	·	·	·	·	·

INTEGRATED MASTER IN ELECTRICAL AND COMPUTERS ENGINEERING · FEUP · 5 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
MFES	Formal Methods in Software Engineering	·	●	●	●	·	·	·	·	·	·
SOPE	Operating Systems	·	·	·	·	·	·	●	·	·	·
PRO2	Programming II	·	·	·	●	●	●	·	·	·	·

DEGREE IN COMPUTER SCIENCE · FCUP · 3 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
	Software Architecture	·	·	·	·	·	·	·	·	●	·

INTEGRATED MASTER IN NETWORK AND INFORMATION SYSTEMS ENGINEERING · FCUP · 5 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
	Software Architecture	·	·	·	·	·	·	·	·	●	·

MASTER IN SERVICES ENGINEERING AND MANAGEMENT · FEUP · 2 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
ERS	Requirements Engineering for Services	·	·	·	·	·	·	·	●	·	·

DEGREE IN INFORMATION SCIENCE · FEUP & FLUP · 3 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
ASI2	Information Systems Analysis 2	·	·	·	·	●	●	●	·	·	·

POST-GRADUATION IN ENTERPRISE APPLICATION ENGINEERING · ISEP · 1 YEAR

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
	Agile Software Development Methodologies	·	·	·	●	·	·	·	·	·	·

DEGREE IN INFORMATICS ENGINEERING · ISTEC · 3 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
	Database Management Systems	●	·	·	·	·	·	·	·	·	·

MASTER IN SOFTWARE ENGINEERING · FEUP · 2 YEARS

		07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17
ADS	Software Architecture and Design	·	·	·	·	·	·	·	·	·	●