# HUGO SERENO FERREIRA, PHD

**BIRTH** 7/1980      **E** HUGO@SHIFTFORWARD.EU      **T** 220301567

Professor (7yrs) at FEUP, researcher (7yrs) and entrepreneur (3yrs) with 14+ years of professional experience, 20+ published works (*h-index 7, i10-index 6*), and 20+ MSc 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*.

After receiving a *LicEng* degree in *Informatics and Computation Engineering*, he performed military R&D for 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. 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).

Early 2011 he co-founded *Shiftforward* with Paulo Cunha, an international strategy and technology consultancy company specialised in big-data software infrastructures for the Online Advertising industry. In 2014, after raising 1.2M\$ in seed VC funding, Shiftforward's business model evolved into a *framework-as-a-service*, lead by its flag products, the *AdStax* and the *AdForecaster*, a state-of-the-art forecasting engine targeted both to the supply and demand side, able to predict the performance of multiple campaigns with arbitrary segments and targeting rules, in systems with billions of impressions (tested from $10^9$ to $10^{12}$), and simulate alternative *"what-if"* scenarios in just a few seconds.

## Professional experience

### CURRENTLY HELD POSITIONS & AFFILIATIONS

| | | |
|---|---|---|
| ⋆ 2013 — | *Assistant Professor*, FEUP Faculty of Engineering, University of Porto | { http://www.fe.up.pt } |
| ⋆ 2014 — | *Member of the Board of Directors & Shareholder*, Shiftforward, S.A. | { http://shiftforward.eu } |
| ⋆ 2011 — | *Co-Founder & Chief Technology Officer* (CTO), Shiftforward, S.A. | { http://shiftforward.eu } |
| ⋆ 2009 — | *Senior Researcher*, INESC Instituto de Engenharia de Sistemas e Computadores do Porto | |

### PAST EXPERIENCE IN ACADEMY

| | | |
|---|---|---|
| 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

| | |
|---|---|
| 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 & divulgation    BIBLIOMETRICS  CITATIONS 108 · H-INDEX 7 · I10-INDEX 6

### JOURNAL ARTICLES (PEER-REVIEWED)

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)

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. 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 SEDES'2012 at the 8th International Conference on the Quality of Information and Communications Technology. 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'12). 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. 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. 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, Portland, 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. 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, Reno, 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, 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. 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

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*

TALKS & SHOWS

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

## Teaching

**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 |
|---|---|---|---|---|---|---|---|---|
| Agile Software Development Methodologies | · | · | · | · | ● | ● | ● | · |
| Formal Methods in Software Engineering | · | ● | ● | ● | · | · | · | ● |
| Software Engineering Seminars | · | · | · | · | ● | · | · | · |
| Object-Oriented Programming Laboratory | · | · | · | ● | · | · | ● | · |
| Operating Systems | · | · | ● | · | · | · | · | · |
| Project Management Laboratory | · | · | · | ● | · | · | · | ● |
| Software Engineering | · | ● | · | · | · | ● | ● | ● |
| Software Engineering Laboratory | · | ● | · | · | · | · | · | · |

**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 |
|---|---|---|---|---|---|---|---|---|
| Programming 2 | · | · | · | · | ● | ● | ● | · |
| Formal Methods in Software Engineering | · | ● | ● | ● | · | · | · | · |
| Operating Systems | · | · | · | · | · | · | ● | · |

**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 |
|---|---|---|---|---|---|---|---|---|
| Requirements Engineering for Services | · | · | · | · | · | · | · | ● |

**LICENCIATE IN INFORMATION SCIENCE · FEUP & FLUP · 3 YEARS**

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

**LICENCIATE IN INFORMATICS ENGINEERING · ISTEC · 3 YEARS**

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

## Educational services

★ 2011 —     Tiago Boldt Sousa, *Object-Functional Patterns: Rethinking Development in a Postfunctional World*.

MASTER DEGREE IN INFORMATICS ENGINEERING SUPERVISING · FEUP

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

MASTER DEGREE IN INFORMATICS ENGINEERING CO-SUPERVISING · FEUP

2013 — 14   Pedro Borges, *Online Advertising: Forecasting and Synthesising Web Activity Based On Historical Data* at SHIFTFORWARD.

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

BACHELOR DEGREE IN INFORMATICS ENGINEERING CO-SUPERVISING · ISEP

2012     Diogo Silva, *Desenvolvimento de Aplicação Android para Monitorização de Idosos* at INESC.

2012     Vítor Moreira, *Desenvolvimento de Aplicação Android para Monitorização de Idosos* at INESC.

SCIENTIFIC INITIATION SUPERVISING

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

OTHER EDUCATIONAL & TEACHING SERVICES

2014     Organizer, *"My first 3D film"*, 1ˢᵗ ed. An introduction to visual programming languages using Alice, ages 12–15 @ Universidade Júnior

2014 Organizer, *"Mummy, daddy, I shrunk my computer!!!"*. 2nd ed. An introduction to the RaspberryPI, electronics and programming, ages 12–15 @ Universidade Júnior

2013 Organizer, *"Mummy, daddy, I shrunk my computer!!!"*, 1st ed. { http://universidadejunior.up.pt }

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

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 *Member, 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*

GRANT COMMITEES

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

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)

2014    *Chair.* Inter-University Programming Marathon (MIUP 2014), Porto@FEUP, Portugal.

2012    *Co-Chair.* 3ʳᵈ Agile Portugal

2011    *Co-Chair.* 2ⁿᵈ Agile Portugal

2010    *Co-Chair.* 1ˢᵗ 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

OTHER SCIENTIFIC & MANAGEMENT ACTIVITIES

★ 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.

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.

# 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 —     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 —     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, intended for sports and leisure activities in the wild. The system was developed in cooperation with Infoportugal and IGeOE. Technologies: C++, C#.