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Tiago holds a *Ph.D. (Cum Laude)* in Software Engineering from Faculdade de Engenharia da Universidade do Porto, where he researched cloud computing architectures. Since 2012, he also has been teaching at the institution.

In the industry, Tiago has been building products for digital marketing since 2011. He was the first engineer at ShiftForward, where he soon moved to a product leadership role. He helped grow the company towards its acquisition by Velocidi (2018) and later by Kevel (2022), where he kept the same role. As product lead, Tiago owns the product strategy, namely defining the roadmap, drafting features with the design team, prioritizing them for development, supporting the engineering team's planning and methodology, and cooperating with the marketing team on product communication.

His previous experiences took him through several *R&D* positions in academia, entrepreneurship initiatives, and independent consulting in Software Engineering.

Current positions

Product Lead, Kevel

Invited Assistant Professor, Faculdade de Engenharia da Universidade do Porto

Education

Degrees

2020 *Doctor in Informatics Engineering, Cum Laude.*

Thesis: *Engineering Software for the Cloud - A Pattern Language.*

Abstract: Researched the intricacies of designing software for the cloud. Documented practices in this domain fall in a wide range of scientific validity, with most originating from limited observation or experience, lacking empirical validation, and thus insufficient to support informed design decisions. We set ourselves to identify and document successful design practices for cloud software in a way that professionals can easily employ.

Supervisor: Hugo Sereno Ferreira, Ph.D..

Co-supervisor: Filipe Correia, Ph.D..

Institution: Faculdade de Engenharia da Universidade do Porto.

2011 *Master in Informatics and Computing Engineering.*

Thesis: *Storytelling for Older Adults in Online Social Networks with Novel Web Technologies.*

Abstract: Research the readiness of HTML 5 for mainstream adoption, while using it to develop a prototype for an online storytelling application for older adults, integrated with an existing online social network. We attempt to facilitate their internet adoption and increase their well-being, by creating a new communication channel to their physically distant loved ones. We conclude that HTML 5 is a viable adoption for cross-platform development, as long as only devices with recent browsers are target. Also, we verify that with the right design and devices, the lack of familiarity between some older adults and technology can be overcome.

Supervisor: Eduarda Mendes Rodrigues, Ph.D..

Institution: Faculdade de Engenharia da Universidade do Porto.

Courses

2020 *Product Management: Transforming Opportunities into Great Products.*

Instructors: Anand Subramani and Jiaona Zhang

Institution: Stanford University. [Online](#).

Work Experience

Faculty of Engineering - University of Porto

- since 2020 *Invited Assistant Professor.* Department of Software Engineering.
- 2012 – 2020 *Assistant Lecturer.* Department of Software Engineering.
- 2010 *Software Engineering Consultant.* Design a system for generating, managing, and evaluating student groups for the courses of the Masters in Industrial Engineering and Management.
- 2010 *Software Engineer at Centro Informático Professor Correia Araújo.* Design and implement an access control system for electronic room access at Faculdade de Engenharia da Universidade do Porto, integrated with the existing information system.

ShiftForward, Velocidi, and Kevel

ShiftForward was a software house founded in 2011 in Porto, specializing in digital marketing consulting and product development. Tiago was the first hire and implemented the first consulting project. His contribution to the company observed a hiatus between 2011 and 2014 to bootstrap the Ph.D. research and teaching.

ShiftForward was acquired in late 2018 by Velocidi. Shortly after, Velocidi reorganized internally to focus exclusively on the business acquired from ShiftForward, recovering the managing structure from ShiftForward. Tiago continued to be responsible for the single product available at the company.

Later in 2022, Kevel acquired Velocidi to complement their offer in technology for optimizing digital marketing. The Velocidi team continued to autonomously develop their product within Kevel, with a strategic goal of creating partnerships with other existing products.

At Kevel, Tiago began inviting and supervising students for both pursuing their master's thesis and doing internships at the company.

- since 2014 *Product Lead.* Define and prioritize new features, collaborate with the design team, support the engineers' planning and methodology, and cooperate with the marketing team on product communication.

2011 *Software Engineer*. Design and implement a scalable container tag system for digital marketing purposes.

INESC TEC

Institute for Systems and Computer Engineering, Technology, and Science.

since 2020 *Invited Researcher*.

2011 – 2014 *Researcher*. AAL4ALL: Software architecture for a health infrastructure responsible for acquiring and propagating medical data from multiple consumers and producers, with an expected volume of data of over one million messages per day.
eCAALYX and CAALYX-MV (EU projects): Capture data from biometric sensors using mobile phones and forward it through a gateway responsible for filtering and processing it.

OTHERS

2010 – 2011 *Junior Researcher at Fraunhofer Portugal AICOS*. Research of novel web technologies and their uses to build cross-platform applications. Design and implementation of an ONLINE SOCIAL NETWORK FOR OLDER ADULTS.

2010 *Consultant for Tecla Colorida - Software Educativo Lda*. Design and implement a system for ICF classification in public schools.

2009 *Software Engineer at SAPO/Associação Ensino Livre/Portugal Telecom*. Development of AnimAll, a Python slide show generator using GStreamer.

Academic Activity

TEACHING - FEUP

2022/23 Databases and Web Application Laboratory,
Software Engineering,
Project Management Laboratory.

2021/22 Databases and Web Application Laboratory,
Capstone Project - Bachelor's degree final project,
Project Management Laboratory.

2020/21 Databases and Web Application Laboratory.
Software Development Laboratory,

2020/21 Software Development Laboratory,
Databases and Web Application Laboratory.

2019/20 Software Development Laboratory,
Databases and Web Application Laboratory,
Software Systems Architectures.

2018/19 Software Development Laboratory,
Databases and Web Application Laboratory.

2017/18 Software Development Laboratory,
Software Engineering,
Databases and Web Application Laboratory.

2016/17 Computers Laboratory,
Databases and Web Application Laboratory.

2015/16 Computers Laboratory,
Databases and Web Application Laboratory.

2014/15 Algorithm Conception and Analysis,
Software Development Laboratory.

2013/14 Databases and Web Applications Laboratory,
Software Development Laboratory.

2012/13 Computer Laboratory,
Databases and Web Application Laboratory,
Software Development Laboratory.

SUPERVISIONS

Master Thesis

- 2022 André Rocha. *Leveraging Serverless Computing for Continuous Integration and Delivery*. FEUP. Developed at JetBrains.
- 2021 Rui Alves. *Towards the Partitioning and Operation of Web Applications leveraging Platform and Function as a Service*. FEUP.
Henrique Lima. *Towards Safer Continuous Infrastructure-as-Code Deployments*. FEUP. Developed at Amazon Web Services.
Nuno Lopes. *Privacy-oriented Task Orchestration System for IoT Networks*. FEUP. Developed at Fraunhofer AICOS.
- 2016 Ruben Barros. *DevOps Technologies for Tomorrow*. ISEP.
Carlos Teixeira. *Towards DevOps: Practices and Patterns from the Portuguese Startup Scene*. FEUP.
- 2015 Filipe Oliveira. *Exploring the Scala Macro System for Compile Time Model-Based Generation of Statically Type-Safe REST Services*. FEUP.
- 2014 Luís Fonseca. *Exploring Rapid Application Development for Android with Scala and SBT*. FEUP.
Omar Castro. *Shellhive: Towards a Collaborative Visual Programming Language for UNIX Workflows*. FEUP.
- 2013 João Alves, *Towards a Self-Managed Framework for Orchestration and Integration of Devices in AAL*. FEUP.
Vasco Grilo. *Exploring the flexibility of Scala Implicits towards an Extensible Live Environment*. FEUP.
- 2012 Tiago Almeida. *End-User Programming In Mobile Devices through Reusable Visual Components Composition*. FEUP.

Bachelor's Projects

- 2012 Diogo Silva, Vitor Moreira. *Aplicação Android para Monitorização de Idosos*. ISEP.

Internships

- 2023 Diogo Fernandes. *Desenvolvimento de uma biblioteca de componentes em React com Storybook*. Kevel
- 2022 Henrique Nunes. *Revamping Velocidi's Testing Pipelines*. Summer Internship. Velocidi
- 2021 André Rocha. Summer Internship. Amazon Web Services Spain and FEUP.
- 2019 Rui Alves. *Fractal ID*. Life on Mars and FEUP
- 2019 Angelo Teixeira. *Meta Product Types to UNSPSC Migration Tool*. Amazon Web Services Spain and FEUP.
- 2018 Pedro Costa. *Automation for Sales Operations*. Summer internship. Amazon Web Services Spain and FEUP.
- 2018 Miriam Gonçalves. *Adforecaster User Interface*. Summer internship. Velocidi and FEUP.
- 2017 Pedro Costa. *Human Resources Management Platform*. Summer internship. Bit-Maker and FEUP.
- 2017 Maria João Mira Paulo. *Mobile Marketing App*. Summer internship. SportZone and FEUP.

Jury participations

- 2011 Amadeu Pereira. *Empirical Study on Live Automatic Program Repair*; João Amaral. *Scalable and privacy preserving AI in federated environments.*; Pedro Silva. *Automated Generic Optimization in Real time using Mutation Operators*. President. FEUP.
- 2020 João Carvalho. *Localização de cliente baseada em radiofrequência e forma de aportar valor ao negócio*. President. FEUP.

OTHERS

- 2014 – 2019 *My First 3D Movie*. A Summer course at the university for students aged between 15 and 17. Universidade Júnior, Universidade do Porto, Porto.
- 2012, Oct *Automated Tests in Python*, 1 day workshop session. Ubiwhere.
- 2008, 2009 *A Computer's Anatomy*. Summer course for students with age comprehended between 15 and 17. Universidade Júnior, Universidade do Porto, Porto.

Grants, Honors & Awards

- 2020 *Cum Laude Ph.D.* thesis distinction, Faculdade de Engenharia da Universidade do Porto.
- 2015 *ACM SIGPLAN Professional Activities* grant for sponsoring the work presented at the 22nd Conference on Pattern Languages of Programs (PLoP '15).
- 2012 Best Paper award, Portuguese Software Engineering Doctoral Symposium.
- 2006 Best Student, Escola Secundária de Gondomar.

Publications

- 2022 Tiago Boldt Sousa. *Customer Data Platforms: A Pattern Language for Digital Marketing Optimization with First-Party Data*. Proceedings of the 2022 Conference on Pattern Languages of Programs (PLoP '22).
- 2021 Tiago Boldt Sousa, Filipe Correia, Hugo Sereno Ferreira. *A Survey on the Adoption of Patterns for Engineering Software for the Cloud*. IEEE Transactions on Software Engineering, volume 48, issue 6.
- 2020 João Pedro Dias, Tiago Boldt Sousa, André Restivo, Hugo Sereno Ferreira. *A pattern-language for self-healing Internet-of-Things systems*. Proceedings of the 2020 Conference on Pattern Languages of Programs (PLoP '20).

- 2020 Tiago Boldt Sousa. *Engineering Software for the Cloud: A Pattern Language*. Doctoral thesis.
- 2019 João Pedro Dias, Ferreira, Hugo Sereno Ferreira, Tiago Boldt Sousa. *Testing and Deployment Patterns for the Internet-of-Things*. 24th European Conference on Pattern Languages of Programs (EuroPLoP '19).
- 2019 Hugo Sereno Ferreira, André Restivo, Tiago Boldt Sousa. *Towards a Pattern Language for the Masters' Student*. 24th European Conference on Pattern Languages of Programs (EuroPLoP '19).
- 2018 Tiago Boldt Sousa, Hugo Sereno Ferreira, Filipe Correia. *Overview of a Pattern Language for Engineering Software for the Cloud*. Proceedings of the 2018 Conference on Pattern Languages of Programs (PLoP '18).
- 2018 Tiago Boldt Sousa, Hugo Sereno Ferreira, Filipe Figueiredo Correia, Ademar Aguiar. *Engineering Software for the Cloud: Automated Recovery and Scheduler*. 23rd European Conference on Pattern Languages of Programs Proceedings (EuroPLoP '18).
- 2018 Tiago Boldt Sousa, Hugo Sereno Ferreira, Filipe Figueiredo Correia, Ademar Aguiar. *Engineering Software for the Cloud: External Monitoring and Failure Injection*. 23rd European Conference on Pattern Languages of Programs Proceedings (EuroPLoP '18).
- 2017 Tiago Boldt Sousa, Hugo Sereno Ferreira, Filipe Figueiredo Correia, Ademar Aguiar. *Engineering Software for the Cloud: Messaging Systems and Logging*. Proceedings of the 22nd European Conference on Pattern Languages of Programs (EuroPLoP '17).
- 2016 Tiago Boldt Sousa, Ademar Aguiar, Hugo Sereno Ferreira, Filipe Figueiredo Correia. *Engineering software for the cloud: patterns and sequences*. Proceedings of the 11th Latin-American Conference on Pattern Languages of Programming (SugarLoaf PLoP '16).
- 2015 Tiago Boldt Sousa, Filipe Correia, Hugo Sereno Ferreira. *Patterns for Software Orchestration on the Cloud*. Proceedings of the 22nd Conference on Pattern Languages of Programs (PLoP '15).

- 2014 Omar Castro, Tiago Boldt Sousa, Hugo Sereno Ferreira. *Collaborative Web Platform for UNIX-based Big Data Processing*. International Conference on Cooperative Design, Visualization and Engineering (CDVE '14).
- 2014 João Pascoal Faria, Bruno Lima, Tiago Boldt Sousa, Angelo Martins. *A testing and certification methodology for an open ambient-assisted living ecosystem* International Journal of E-Health and Medical Communications.
- 2013 Tiago Boldt Sousa. *Sensors, actuators and services: a distributed approach*. Proceedings of the 2013 companion publication for conference on Systems, programming, & applications: software for humanity (SPLASH '13).
- 2013 Tiago Boldt Sousa and Angelo Martins. *Monitor, Control and Process – An Adaptive Platform for Ubiquitous Computing*. International Conference on Cooperative Design, Visualization and Engineering (CDVE '13).
- 2013 Joao Pascoal Faria, Bruno Lima, Tiago Boldt Sousa and Angelo Martins. *A Testing and Certification Methodology for an Ambient-Assisted Living Ecosystem*. IEEE 15th International Conference on e-Health Networking, Applications & Services (Healthcom).
- 2012 Tiago Boldt Sousa and Hugo Sereno Ferreira. *Object-Functional Patterns: Rethinking Development in a Post-Functional World*. Eighth International Conference on the Quality of Information and Communications Technology (QUATIC '12).
- 2012 Hugo Sereno Ferreira, Tiago Boldt Sousa and Angelo Martins. *Scalable Integration of Multiple Health Sensor Data for Observing Medical Patterns*. International Conference on Cooperative Design, Visualization and Engineering (CDVE '12).
- 2012 Tiago Almeida, Hugo Sereno Ferreira and Tiago Boldt Sousa. *A Collaborative Expandable Framework for End-users and Programmers*. International Conference on Cooperative Design, Visualization and Engineering (CDVE '12).
- 2012 Tiago Boldt Sousa. *Dataflow Programming: Concept, Languages and Applications*. Doctoral Symposium on Informatics Engineering (DSIE '12).

- 2012 Sandra Prescher, Alan K. Bourke, Friedrich Koehler, Angelo Martins, Hugo Sereno Ferreira, Tiago Boldt Sousa, Rui Nuno Castro, António Santos, Marc Torrent, Sergi Gomis, Margarita Hospedales and John Nelson. *A Ubiquitous Ambient Assisted Living Solution to Promote Safer Independent Living in Older Adults Suffering from Co-morbidity*. 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'12).
- 2011 Tiago Boldt Sousa. *Storytelling for older adults in online social networks with novel web technologies*. Master's thesis.
- 2011 Tiago Boldt Sousa, Pedro Tenreiro, Paula Alexandra Silva and Eduarda Mendes Rodrigues. *Storytelling meets the Social Web: an HTML5 cross-platform application for older adults*. 13th International Conference on Human-Computer Interaction (Interact '11).
- 2011 Tiago Boldt Sousa, Pedro Tenreiro, Paula Alexandra Silva and Eduarda Mendes Rodrigues. *Cross-Platform Social Web Application for Older Adults with HTML 5*. International Conference on Entertainment Computing (ICEC '11).
- INVITED TALKS
- 2023 Hajar Baghcheband (Moderator), João Pedro Dias (BUILT CoLAB), João Reis (DEUS.ai), Tiago Boldt Sousa (Kevel). Panel: PhD Paths. ProDEI Symposium 2023. Faculdade de Engenharia da Universidade do Porto.
- 2022 Tiago Boldt Sousa (FEUP), Sofia Peixoto (Korber Digital), Rogério Ferreira (Critical Manufacturing), Rui Galvão Brito (IPMA Young Crew). *Panel: Project Management - Theory to Practice..* Critical Manufacturing.
- 2021 Martinho Aragão, Roberto Machado, Tiago Boldt Sousa. Balvenie 12 - Product Managers com background em Engenharia Informática. Product on the Rocks Podcast. [Online](#).
- 2021 Roundtable: *The Monster of Cookies*. A discussion on the future of the web in a world without cookies in the browser. <https://ti.to/ieeupsb/web-month-21>. NuIEEE Web Month, FEUP.
- 2013 *Hands-On Introduction to Agile Methodologies*. NuIEEE Hack Day, FEUP.

2011 *Software Livre - Conceito e Aplicações*. Semana TIC, Escola Secundária de Gondomar.

BOOKS REVIEWED

2022 *Think Like a CTO*. Alan Williamson. Manning Publications.

2020 *Naming Things*. Tom Benner.

2018 *Microservices in Action*. Morgan Bruce and Paulo Pereira. Manning Publications.

OTHER PUBLICATIONS

2010 *Gnome: Tips and Tricks*, Linux Identity Magazine.

Awesome Desktops, Linux Identity Magazine.

How to Make Backup Copies from Your Files and Reading Windows Files, Linux Identity Magazine.

Conference Organization

2022 Program Chair. *European Pattern Language of Programs 2022* (EuroPloP22), Irsee, Germany.

2022 Student Volunteer Chair. *⟨Programming⟩ 2022*, Porto, Portugal.

2021 Program Chair. *European Pattern Language of Programs 2021* (EuroPloP21), Online.

2020 Program Chair. *European Pattern Language of Programs 2020* (EuroPloP20), Online.

2019 Conference Chair. *European Pattern Language of Programs 2019* (EuroPloP19), Irsee, Germany.

2017 Student Volunteer. *European Pattern Language of Programs 2017* (EuroPloP17), Irsee, Germany.

2016 Student Volunteer. *SugarLoaf PloP 2016*. Buenos Aires, Argentina.

- 2015 Student Volunteer. *Pattern Language of Programs 2015* (PLoP15). Pittsburgh, United States.
- 2014 Co-Chair. *Jornadas dos 20 anos da Engenharia Informática e Computação*, Porto, Portugal.
- 2012 Local Chair. *8th International Conference on the Quality of Information and Communications Technology*, Lisbon, Portugal.
Co-Chair. *Agile Portugal 2012*, Porto, Portugal.
Organization Committee Co-Chair. *Doctoral Symposium in Informatics Engineering*. FEUP, Porto, Portugal.
- 2011 Co-Chair. *Agile Portugal 2011*. Porto, Portugal.
- 2010 Student Volunteer. *Agile Portugal 2010*. Porto, Portugal.

AFFILIATIONS

- 2019 – now *Hillside Group Europe*. Member.
- 2008 – 2010 *IEEE Porto Student Branch*. President.