

João Pedro Dias

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Summary João Pedro Dias has an MSc in INFORMATICS AND COMPUTING ENGINEERING by the FACULTY OF ENGINEERING, UNIVERSITY OF PORTO. He is a Ph.D. student of the DOCTORAL PROGRAM IN INFORMATICS ENGINEERING by the same university since 2017. He is an Invited Assistant Lecturer at FEUP since 2017 and has co-supervised 4 MSc dissertations. Has participated as Researcher in 2 projects at LIACC and INESC TEC (Porto, Portugal). Works in the area of Software Engineering, with a special interest in Design Patterns, Internet-of-Things, and Security.

PROFESSIONAL APPOINTMENTS

- ²⁰¹⁷ / _ **Invited Assistant Lecturer**
Department of Informatics Engineering (DEI), Faculty of Engineering, University of Porto, Porto, Portugal
- ²⁰¹⁷ / _ **Researcher**
Centre for Information Systems and Computer Graphics (CSIG)
Institute for Systems and Computer Engineering (INESC TEC), Technology and Science, Porto, Portugal
- ²⁰¹⁶ / ²⁰¹⁷ **Researcher**
LIACC – Artificial Intelligence and Computer Science Laboratory
University of Porto, Porto, Portugal
- ²⁰¹⁵ / ²⁰¹⁵ **Summer Engineering Intern**
ShiftForward, S.A. (now Velocidi)
Porto, Portugal
- ²⁰¹⁴ / ²⁰¹⁴ **IT Department Internship**
Centro Hospitalar do Tâmega e Sousa, E.P.E.
Penafiel, Porto, Portugal

EDUCATION

- ²⁰¹⁶ / _ **Doctoral Programme in Informatics Engineering – ProDEI (PhD)**, Faculty of Engineering, University of Porto, Porto, Portugal
Work under Supervision of Hugo Sereno Ferreira, PhD and Co-Supervision of João Pascoal Faria, PhD
- ²⁰¹¹ / ²⁰¹⁶ **Integrated Masters in Informatics and Computing Engineering – MIEIC (BSc + MSc)**, Faculty of Engineering, University of Porto, Porto, Portugal
GPA: 15 out of 20

²⁰⁰⁸/₂₀₁₁ **Elementary School – Sciences and Technologies**, Externato de Vila Meã, Porto, Portugal
GPA: 17 out of 20

TEACHING

Invited Assistant Lecturer

Integrated Master in Informatics and Computing Engineering · FEUP · 5 years

				¹⁷ / ₁₈	¹⁸ / ₁₉	¹⁹ / ₂₀
		Year	ECTS	Classes		
Object Oriented Programming Lab	LPOO	2	6	-	1	-
Operating Systems	SOPE	2	6	2	1	2
Software Development Lab	LDSO	4	7,5	-	1	-
Software Systems Architecture	ASSO	4	6	-	1	-

PUBLICATIONS

Peer-Reviewed Journals

- 2020 ♦ Pedro Lourenço, João Pedro Dias, Ademar Aguiar, Hugo Sereno Ferreira, and André Restivo. “Experimenting with Liveness in Cloud Infrastructure Management”. In: *Communications in Computer and Information Science* 1172 (2020)
- ♦ Diogo Amaral, Gil Domingues, João Pedro Dias, Hugo Sereno Ferreira, Ademar Aguiar, Rui Nóbrega, and Filipe Figueiredo Correia. “Live Software Development Environment using Virtual Reality: a Prototype and Experiment”. In: *Communications in Computer and Information Science* 1172 (2020)
- 2018 ♦ João Pedro Dias, Ângelo Martins, and Hugo Sereno Ferreira. “A Blockchain-based Approach for Access Control in eHealth Scenarios”. In: *Journal of Information Assurance and Security* 13 (4 2018), pp. 125–136

Peer-Reviewed Conference Proceedings

- 2020 ♦ João Pedro Dias, Bruno Lima, João Pascoal Faria, André Restivo, and Hugo Sereno Ferreira. “Visual Self-Healing Modelling for Reliable Internet-of-Things Systems”. In: *Proceedings of the 20th International Conference on Computational Science*. To Appear. Springer, 2020, pp. 27–36

- ♦ João Pedro Dias, André Lago, and Hugo Sereno Ferreira. “Conversational Interface for Managing Non-Trivial Internet-of-Things Systems”. In: *Proceedings of the 20th International Conference on Computational Science*. To Appear. Springer, 2020, pp. 27–36
- 2019 ♦ João Pedro Dias, Hugo Sereno Ferreira, and Tiago Boldt Sousa. “Testing and Deployment Patterns for the Internet-of-Things”. In: *Proceedings of the 24th European Conference on Pattern Languages of Programs*. EuroPLop '19. Irsee, Germany: Association for Computing Machinery, 2019. ISBN: 9781450362061. DOI: [10.1145/3361149.3361165](https://doi.org/10.1145/3361149.3361165)
- ♦ Ademar Aguiar, André Restivo, Filipe Figueiredo Correia, Hugo Sereno Ferreira, and João Pedro Dias. “Live Software Development: Tightening the Feedback Loops”. In: *Proceedings of the Conference Companion of the 3rd International Conference on Art, Science, and Engineering of Programming*. Programming '19. Genova, Italy: ACM, 2019, 22:1–22:6. ISBN: 978-1-4503-6257-3. DOI: [10.1145/3328433.3328456](https://doi.org/10.1145/3328433.3328456)
- ♦ Pedro Lourenço, João Pedro Dias, Ademar Aguiar, and Hugo Sereno Ferreira. “CloudCity: A Live Environment for the Management of Cloud Infrastructures”. In: *Proceedings of the 14th International Conference on Evaluation of Novel Approaches to Software Engineering - Volume 1: ENASE*,. INSTICC. SciTePress, 2019, pp. 27–36. ISBN: 978-989-758-375-9. DOI: [10.5220/0007699700270036](https://doi.org/10.5220/0007699700270036)
- ♦ Diogo Amaral, Gil Domingues, João Pedro Dias, Hugo Sereno Ferreira, Ademar Aguiar, and Rui Nóbrega. “Live Software Development Environment for Java using Virtual Reality”. In: *Proceedings of the 14th International Conference on Evaluation of Novel Approaches to Software Engineering - Volume 1: ENASE*,. INSTICC. SciTePress, 2019, pp. 37–46. ISBN: 978-989-758-375-9. DOI: [10.5220/0007699800370046](https://doi.org/10.5220/0007699800370046)
- 2018 ♦ D. Pinto, João Pedro Dias, and Hugo Sereno Ferreira. “Dynamic Allocation of Serverless Functions in IoT Environments”. In: *2018 IEEE 16th International Conference on Embedded and Ubiquitous Computing (EUC)*. Oct. 2018, pp. 1–8. DOI: [10.1109/EUC.2018.00008](https://doi.org/10.1109/EUC.2018.00008)
- ♦ João Pedro Dias, F. Couto, A. C. R. Paiva, and Hugo Sereno Ferreira. “A Brief Overview of Existing Tools for Testing the Internet-of-Things”. In: *2018 IEEE International Conference on Software Testing, Verification and Validation Workshops (ICSTW)*. Apr. 2018, pp. 104–109. DOI: [10.1109/ICSTW.2018.00035](https://doi.org/10.1109/ICSTW.2018.00035)
- ♦ João Pedro Dias, João Pascoal Faria, and Hugo Sereno Ferreira. “A Reactive and Model-Based Approach for Developing Internet-of-Things Systems”. In: *2018 11th International Conference on the Quality of Information and Communications Technology (QUATIC)*. Sept. 2018, pp. 276–281. DOI: [10.1109/QUATIC.2018.00049](https://doi.org/10.1109/QUATIC.2018.00049)
- ♦ José Pedro Pinto, João Pedro Dias, and R. J. F. Rossetti. “Growing Smart Cities on an Open-Data-Centric Cyber-Physical Platform”. In: *2018 IEEE International Smart Cities Conference (ISC2)*. Sept. 2018, pp. 1–6. DOI: [10.1109/ISC2.2018.8656989](https://doi.org/10.1109/ISC2.2018.8656989)
- ♦ João Pedro Dias, Hugo Sereno Ferreira, and Ângelo Martins. “A Blockchain-Based Scheme for Access Control in e-Health Scenarios”. In: *Proceedings of the Tenth International Conference on Soft Computing and Pattern Recognition (SoCPaR 2018)*. Ed. by Ana Maria Madureira, Ajith Abraham, Niketa Gandhi, Catarina Silva, and Mário Antunes. Cham: Springer International Publishing, 2020, pp. 238–247. ISBN: 978-3-030-17065-3. DOI: [10.1007/978-3-030-17065-3_24](https://doi.org/10.1007/978-3-030-17065-3_24)

- ◆ Guilherme Vieira Pinto, João Pedro Dias, and Hugo Sereno Ferreira. “Blockchain-Based PKI for Crowdsourced IoT Sensor Information”. In: *Proceedings of the Tenth International Conference on Soft Computing and Pattern Recognition (SoCPaR 2018)*. Ed. by Ana Maria Madureira, Ajith Abraham, Niketa Gandhi, Catarina Silva, and Mário Antunes. Cham: Springer International Publishing, 2020, pp. 248–257. ISBN: 978-3-030-17065-3. DOI: [10.1007/978-3-030-17065-3_25](https://doi.org/10.1007/978-3-030-17065-3_25)
- 2017 ◆ Antonio Ramadas, Gil Domingues, Joao Pedro Dias, Ademar Aguiar, and Hugo Sereno Ferreira. “Patterns for Things that Fail”. In: *Proceedings of the 24th Conference on Pattern Languages of Programs*. PLoP '17. ACM - Association for Computing Machinery, 2017
- ◆ João Pedro Dias, José Pedro Pinto, and José Magalhães Cruz. “A Hands-on Approach on Botnets for Behavior Exploration”. In: *Proceedings of the 2nd International Conference on Internet of Things, Big Data and Security*. SCITEPRESS - Science and Technology Publications, 2017, pp. 463–469. ISBN: 978-989-758-245-5. DOI: [10.5220/0006392404630469](https://doi.org/10.5220/0006392404630469)

Informal Publications & Others

- 2018 ◆ Filipa Barros, Luis Sousa, João Pedro Dias, and Hugo Sereno Ferreira. “A Preliminary Study on Mesh Networks and IoT”. in: *Book of Abstracts of the 11th Meeting of Young Researchers of University of Porto (IJUP 2018)* (2018)
- 2017 ◆ João Pedro Dias and Hugo Sereno Ferreira. “Automating the Extraction of Static Content and Dynamic Behaviour from e-Commerce Websites”. In: *Book of Abstracts of the 10th Meeting of Young Researchers of University of Porto (IJUP 2017)* (2017)
- 2016 ◆ João Pedro Dias, José Pedro Pinto, and José Magalhães Cruz. “A hands-on approach on botnets for a learning purpose”. In: *Book of Abstracts of the 9th Meeting of Young Researchers of University of Porto (IJUP 2016)* (2016)

Preprints

- 2018 ◆ João Pedro Dias and Hugo Sereno Ferreira. “State of the Software Development Life-Cycle for the Internet-of-Things”. In: *CoRR* abs/1811.04159 (2018). arXiv: [1811.04159](https://arxiv.org/abs/1811.04159). URL: <http://arxiv.org/abs/1811.04159>

Dissertations

- 2016 ◆ João Pedro Dias. “Reverse Engineering Static Content and Dynamic Behaviour of E-Commerce Sites for Fun and Profit”. Master’s Dissertation, Faculty of Engineering, University of Porto, Supervised by Hugo Sereno Ferreira. 2016. URL: <http://hdl.handle.net/10216/85374>

EDUCATIONAL ACTIVITIES

Master’s Dissertation Co-Supervision

- 2019 / _ *Visual Programming Language for Orchestration with Docker* by Bruno Piedade
Supervisor: Filipe Correia, PhD
Faculty of Engineering, University of Porto, Porto, Portugal
- 2018 / 2019 *Implementing a Multi-Approach Debugging of Industrial IoT Workflows* by Andreia Rodrigues, 10216/122773
Supervisor: Hugo Sereno Ferreira, PhD
Faculty of Engineering, University of Porto, Porto, Portugal
- 2017 / 2018 *Dynamic Allocation of Serverless Functions in IoT Environments* by Duarte Pinto, 10216/114149
Supervisor: Hugo Sereno Ferreira, PhD
Faculty of Engineering, University of Porto, Porto, Portugal
- Blockchain as a PKI for Ownership Control of IoT Devices* by Guilherme Pinto, 10216/114144
Supervisor: Hugo Sereno Ferreira, PhD
Faculty of Engineering, University of Porto, Porto, Portugal
- 2016 / 2017 *Interoperability In Software Applications For Smart Cities: Towards A Reference Architecture* by José Pedro Pinto, 10216/107529
Supervisor: Rosaldo Rossetti, PhD
Faculty of Engineering, University of Porto, Porto, Portugal

PROJECTS

- 2017 / 2018 **NanoSTIMA: Macro-to-Nano Human Sensing: Towards Integrated Multimodal Health Monitoring and Analytics**, Researcher at INESC TEC
Reference NORTE-01-0145-FEDER-000016, nanostima.inesctec.pt
- 2016 / 2017 **PEDDIR DEMO: Weigth in motion and wheels defect detection (Sistema de Pesagem Dinâmica e Detecção de Irregularidades dos Rodados)**, Researcher at LIACC
Reference NORTE-01-0247-FEDER-006397, peddir.eu

PRESENTATIONS & WORKSHOPS

Slides and abstracts for all presentations are available at speakerdeck.com/jpdias

- 2019 ♦ João Pedro Dias. “Internet-of-broken-Things: A highly-opinionated overview”. 0xOPOSEC Meetup. 2019. URL: <https://www.meetup.com/0xOPOSEC/>
- ♦ João Pedro Dias. “Unravelling the Web of Things: Exploring Mozilla Things Framework (Workshop)”. Pixels Camp v3.0 by Bright Pixel. 2017. URL: <https://pixels.camp>
- 2017 ♦ João Pedro Dias. “PiHeadquarters or How to Take Control of your House with Raspberry Pi and Docker (Workshop)”. Pixels Camp v2.0 by Bright Pixel. 2017. URL: <https://pixels.camp>

- 2016 ♦ João Pedro Dias and José Pedro Pinto. “A hands-on approach on botnets for a learning purpose”. 0xOPOSEC Meetup. 2016. URL: <https://www.meetup.com/0xOPOSEC/>
- 2015 ♦ João Pedro Dias and José Pedro Pinto. “How To Create Your First Personal Webpage”. ShARE World Seminar 2015 – “Europe vs. Asia: Grass Is Always Greener On The Other Side”. 2015. URL: <http://www.share-share.org/world-seminar/>

ACADEMIC SERVICE & AFFILIATIONS

Reviewer

IEEE Intelligent Vehicles Symposium (IEEE IV 2017) • IEEE 20th International Conference on Intelligent Transportation Systems (IEEE ITSC 2017) • IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC 2019)

Committees

2019 **Track Co-Chair**, Symposium on Informatics Engineering, part of the 3rd Doctoral Congress Engineering (DCE19)

Program Committee Member, Talk a Bit – Student Organized Tech Conference, 7th Edition (2019)

2018 **Makerspace Chair**, 19th International Conference on Agile Software Development (XP 2018)

Conference Organization Chair, 13th Doctoral Symposium in Informatics Engineering (DSIE'18)

Advisor Board Member, Talk a Bit – Student Organized Tech Conference, 6th Edition (2018)

2017 **Program Committee Member**, 2017 IEEE 1st Summer School on Smart Cities (IEEE S3C 2017)

Web Communication Co-chair, The Second ACM International Workshop on Smart, Autonomous, and Connected Vehicular Systems and Services (ACM CarSys 2017), part of the The 23rd Annual International Conference on Mobile Computing and Networking (MobiCom 2017)

Advisor Board Member, Talk a Bit – Student Organized Tech Conference, 5th Edition (2017)

2016 **Conference Chair**, Talk a Bit – Student Organized Tech Conference, 4th Edition (2016)

Web Communication Co-chair, 2016 IEEE 19th International Conference on Intelligent Transportation Systems (ITSC 2016)

Volunteer Activities

2017 **Student Volunteer (Media Coverage)**, 18th EPIA Conference on Artificial Intelligence (EPIA 2017)
Porto, Portugal

2014 **Student Volunteer**, Inter-University Programming Marathon (MIUP 2014)
Porto, Portugal

Student Volunteer, INForum - Symposium on Informatics (INForum 2014)
Porto, Portugal

Affiliations

²⁰¹⁹/₂₀₂₀ **Association for Computing Machinery (ACM)**, Student Membership.

²⁰¹⁷/_– **Institute for Systems and Technologies of Information, Control and Communication (INSTICC)**.

²⁰¹³/₂₀₁₈ **Institute of Electrical and Electronics Engineers (IEEE)**, Student Membership as part of the University of Porto Student Branch (IEEE UP SB).

GRANTS, HONORS & AWARDS

Grants

²⁰¹⁹/₂₀₂₁ **PhD Scholarship**, by FCT – Fundação para a Ciência e a Tecnologia (Portuguese Foundation for Science and Technology)
Reference SFRH/BD/144612/2019

International Honors & Awards

2017 **427th (of 3350)**, IEEEExtreme – 24h Programming Competition 11.0, ieee.org/xtreme
Online – Porto, Portugal

847th (of 2815), Google Hash Code 2017, hashcode.withgoogle.com
Online – Porto, Portugal

2015 **189th (of 2477)**, IEEEExtreme – 24h Programming Competition 9.0, ieee.org/xtreme
Online – Porto, Portugal

2014 **Honorable Mention**, IEEEEmadC – Mobile Application Development Contest, ieeemadc.org
Online – Porto, Portugal

2013 **126th (of 2570)**, IEEEExtreme – 24h Programming Competition 7.0, ieee.org/xtreme
Online – Porto, Portugal

2nd Place, European BEST Engineering Competition, ebec.best.eu.org
Warsaw, Poland

Domestic Honors & Awards

2018 **6th (of 31 Participants)**, CIBER PERSEU 2018 Portuguese Army Exercise – Capture The Flag component by diateam, exercito.pt
Portuguese Military Academy, Lisbon, Portugal

- 2011 **1st Place**, PmatE Mat12 – Mathematics Competition, pmate.ua.pt
University of Aveiro, Portugal
- 2009 **2nd Place**, PmatE Fis12 – Physics Competition, pmate.ua.pt
University of Aveiro, Portugal

ADDITIONAL TRAINING

- 2020 **Autopsy Basics and Hands On** by Brian Carrier, 8-hours training, Basis Technology Corp. (Online)
- Practical Ethical Hacking - The Complete Course** by Heath Adams, 24.5-hours training, TCM Security, Inc., Udemy (Online)
- Python for Penetration Testers** by Cristi Zot, 2-hours training, Udemy (Online)
- 2018 **1st UPTEC School on the Future of Computing**, 1-week training, UPTEC – Science and Technology Park of University of Porto
- 2017 **CyberTalk: Security - Business Enablement**, 4-hours training, Multicert – Electronic Certification Services, S.A.
- Project Management**, 12-hours training, ERASMUS+ Mobility for teaching at Faculty of Engineering, University of Porto
- 2016 **AWS Technical Essentials Online**, 1-day training, Amazon Web Services – Training and Certification
- 2015 **Practical Workshop in Agile Project Management**, 4-hours training, Strongstep - Innovation in Software Quality
- CERN Spring Campus**, 1-week training, CERN - European Organization for Nuclear Research
- 2014 **M101JS: MongoDB for Node.js Developers**, 25-hours training, MongoDB University (Online)

PROTOTYPES

The prototypes are released under open-source licences, most of them being available through my Github profile: github.com/jpdias.

- ²⁰¹⁶/₂₀₁₇ **Botnet-Lab** – github.com/jpdias/botnet-lab
An IRC based tool for testing the capabilities of a botnet written in Python 2.7.
- ²⁰¹⁶/₂₀₁₆ **Portfolio-Photo** – github.com/jpdias/portfolio-photo
An YAML and Jekyll (Ruby) dynamically generated photography portfolio using the Flickr API.
- ²⁰¹⁵/₂₀₁₅ **Deploy Logger Service (Codename Malamute)** – github.com/ShiftForward/malamute
Application and integration API built for documenting and record the release of new versions of projects (deploys) and its modules. Developed during the summer internship at ShiftForward (now Velocidi).
- ²⁰¹⁴/₂₀₁₅ **Turing Machine** – github.com/jpdias/TuringMachine/
A web-based Turing Machine with a pre-defined language, compiler and execution capabilities.

PRO-BONO AND OTHER ACTIVITIES

Academic

²⁰¹³/₂₀₁₅ **Executive Committee Member (Secretary)**, IEEE University of Porto Student Branch
Organization of several technical workshops and other events including *IEEE Day*, *IEEE Xtreme* and *IEEEmadC*.

Humanitarian

²⁰¹³/₂₀₁₅ **Founder Member**, *Luz da Vida* Youth Group
Organization of activities on behalf of the village community.

Hobbies

²⁰¹⁶/₂₀₁₇ **Football Player**, Grupo Desportivo e Recreativo de Travanca
F.A.D.A. Amateur League, Amarante, Porto, Portugal

²⁰⁰⁸/_– **Amateur Photographer** – Wildlife, Landscapes and Travel
- *One of the 50 best pictures of #MySocialEurope photo competition - How should the Future of social Europe look like?*, promoted by the European Commission, 2019
- *Finalist at the Norte Multimédia Contest - Photography Category*, promoted by the Norte Portugal Regional Coordination and Development Commission (CCDR-N), 2018
- *Finalist at the PORTUGAL NUM ISQUEIRO BIC® Contest*, promoted by the I Love My BIC initiative by BIC Portugal, 2018
- *Exposition at Movimento d'Artes*, promoted by the Cooperativa Cultural Vinha das Artes, 2010

LANGUAGES

Portuguese Native

English B Level (Self-Evaluation)