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–   **Ph.D. 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   **M.Sc. Informatics and Computing Engineering – MIEIC (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

				2017-2018	2018-2019
		Year	ECTS	Classes	
Object Oriented Programming Laboratory	LPOO	2	6	-	1
Operating Systems	SOPE	2	6	2	1
Software Development Laboratory	LDSO	4	7,5	-	1
Software Systems Architecture	ASSO	4	6	-	1

PUBLICATIONS

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. URL: http://arxiv.org/abs/1811.04159

PEER-REVIEWED CONFERENCE PROCEEDINGS

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

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

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

João 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

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

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

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

Peer-Reviewed Journals

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

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)

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

2018–   *Industrial IoT Remote Debugger* by Andreia Rodrigues
Advisor: 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
Advisor: 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
Advisor: 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
Advisor: 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 Deteção 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 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 - Symposion on Informatics (INForum 2014)
Porto, Portugal

AFFILIATIONS

2017– Institute for Systems and Technologies of Information, Control and Communication (INSTICC)

2013–2018 Institute of Electrical and Electronics Engineers (IEEE) as part of the University of Porto Student Branch (IEEE UP SB)

AWARDS & HONORS

INTERNATIONAL

2017 **427th (of 3350)**, IEEEXtreme – 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)**, IEEEXtreme – 24h Programming Competition 9.0, *ieee.org/xtreme*
Online – Porto, Portugal

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

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

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

Domestic

2018 **6th (of 31 Participants)**, CIBER PERSEU 2018 Portguese 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

2018 *1st UPTEC School on the Future of Computing*, UPTEC – Science and Technology
Park of University of Porto

2017 *CyberTalk: Security - Business Enablement*, Multicert – Electronic Certification
Services, S.A.

Project Management, ERASMUS+ Mobility for teaching at Faculty of Engineering,
University of Porto

2016 *AWS Technical Essentials Online*, Amazon Web Services – Training and Certification

2015 *Practical Workshop in Agile Project Management*, Strongstep - Innovation in
Software Quality

CERN Spring Campus, CERN - European Organization for Nuclear Research

2014 *M101JS: MongoDB for Node.js Developers*, MongoDB University (Online)

OPEN-SOURCE SOFTWARE

I work on several open-source projects, all of which are available through my Github profile
github.com/jpdias

2016 **Botnet-Lab** – github.com/jpdias/botnet-lab
An IRC based tool for testing the capabilities of a botnet written in Python 2.7.

2016 **Portfolio-Photo** – github.com/jpdias/portfolio-photo
An YAML and Jekyll (Ruby) dynamically generated photography portfolio using
the Flickr API.

2014   **Turing Machine** – jpdias.me/TuringMachine/
A web-based Turing Machine with a pre-defined language, compiler and execution capabilites.

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*, *IEEEXtreme* 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
- *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)