

# MAFALDA FALCÃO FERREIRA, MSC

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Currently a PH.D. Candidate in (PRODEI), and Invited Lecturer at the Faculty of Engineering of the University of Porto (FEUP), and a researcher at the Institute for Systems and Computer Engineering, Technology and Science (INESC-TEC). In love with technology and innovation ever since I was a little girl. Special interest in the areas of Data Science, Machine Learning, and Web Development. Also passionate about mathematics, sports, traveling and photography.

## Professional experience

- 6/2019 *Teaching Assistant*, The University of Texas at Austin { <https://www.utexas.edu/> } & Faculdade de Engenharia da Universidade do Porto { <http://www.fe.up.pt> }  
*International Perspectives on Biomedical Engineering Design*. A Maymester<sup>1</sup> that aims to enable students to consider sociotechnical factors in designing clinically translatable solutions; students learn human-centered design methods to understand the people for whom they are designing and to identify actionable problem statements.
- ★ 2018 — *Invited Lecturer*, Faculdade de Engenharia da Universidade do Porto { <http://www.fe.up.pt> }  
*Linguagens e Tecnologias Web*, third year, first semester. A Curricular Unit that aims to provide the students with skills in the most significant languages and Web technologies in the current technological context.  
*Laboratório de Programação Orientada a Objetos*, second year, second semester. A Curricular Unit that aims to provide the students with skills in object-oriented programming and design, employing UML, and upholding good design principles and patterns.
- ★ 2018 — *Researcher*, INESC TEC { <http://www.inesctec.pt> }  
Grant (BI) for the study and development of methodologies for knowledge extraction from Deep Learning Architectures (DL) and Artificial Neural Networks (ANNs), in the scope of the project ADIRA\_I4.0: *Desenvolvimento de soluções tecnológicas e de software Indústria 4.0 aplicadas a bens de equipamento*, c.f. POCI-01-0247-FEDER-017922 CESE/INESC TEC.  
Supervisor: Prof. Rui Camacho (FEUP/DEI)
- 2017 — 18 *Junior Researcher*, Fraunhofer Portugal AICOS { <http://www.fraunhofer.pt> }  
Scientist and Developer for the *EyeFundusScope* project, studying *Deep Learning* approaches to Diabetic Retinopathy classification problems<sup>2</sup>.
- 2016 — 17 *Research Assistant*, Fraunhofer Portugal AICOS { <http://www.fraunhofer.pt> }  
Developed a framework for Malaria parasites detection in microscopic images (for the *MalariaScope* project), adaptable to other classification problems.
- 2015 — 17 *Teaching Assistant*, Faculdade de Engenharia da Universidade do Porto { <http://www.fe.up.pt> }  
*Projeto FEUP*, first year, first semester. A Curricular Unit that aims to receive and integrate new coming students, teaching them *Soft Skills* that will be useful for their academic journey and professional future.

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<sup>1</sup>Maymester courses are short-term (4 weeks), faculty-led study abroad programs in which a small group of UT Austin undergraduate students travel with a UT Austin faculty member to an international location (in this case, Porto).

<sup>2</sup>Both Fraunhofer Portugal AICOS projects belong to the *Deus Ex Machina* project (DeM), in the Eyes of Internet of Things Competence Center research line (EIT-CC), c.f. NORTE-01-0145-FEDER-000026.

## Education

- ★ 2018 — PH.D. Candidate in the Doctoral Program in Informatics Engineering (PRODEI) at FEUP.
- 2012 — 17 M.Sc. in Informatics and Computation Engineering (MIEIC) at FEUP.  
*Statistical Comparison of Different Machine-Learning Approaches for Malaria Parasites Detection in Microscopic Images* { <http://hdl.handle.net/10216/106477> }  
Final dissertation mark: 18/20. Supervisor: Prof. Luís Filipe Teixeira.

## Publications

- ★ 2019 M. Falcão Ferreira, R. Camacho, and L. Filipe Teixeira, “Autoencoders as Weight Initialization of Deep Classification Networks for Cancer versus Cancer Studies”, CIBB 2019 - 16<sup>th</sup> International Conference on Computational Intelligence methods for Bioinformatics and Biostatistics (CIBB-2019). Bérghamo, Italy. *To appear*.
- 2018 M. Falcão Ferreira, R. Camacho, and L. Filipe Teixeira, “Autoencoders as Weight Initialization of Deep Classification Networks Applied to Papillary Thyroid Carcinoma”, BIBM 2018 - IEEE International Conference on Bioinformatics and Biomedicine (BIBM-2018). Madrid, Spain.  
DOI: { [10.1109/BIBM.2018.8621356](https://doi.org/10.1109/BIBM.2018.8621356) }
- 2017 M. Falcão Ferreira, L. Filipe Teixeira, and L. Rosado, “Improving Malaria Parasites Detection in Thick Blood Images: A Statistical Approach”, INForum 2017 - Simpósio de Informática (INFORUM-2017). Aveiro, Portugal.  
Part of: { <http://inforum.org.pt/INForum2017/docs/comunicacoes-do-inforum2017/> }

## Media Coverage

- 2017 Agência Lusa, “Tecnologia criada no Porto deteta malária através de imagens obtidas com smartphones”, Portugal. { <https://goo.gl/TnGrKj> }

## Skills

### PROGRAMMING

Python • Java • C/C++ • C# • SQL • UML • HTML5 • CSS/Bootstrap • XML • JavaScript • Prolog • PHP

### OTHERS

Git • Latex • Weka • RapidMiner

### LANGUAGES

Portuguese (native) • English ≡ • Spanish ≡ • French ≡