Fernando **Macías**

Computer Scientist, Post-doctoral Researcher, Ph.D.

Toledo, Spain femaciasg@gmail.com fernandomacias.es

Fernando Macías is a post-doctoral researcher in the areas of Software Engineering and Computer Science. His work includes creative thinking, study of technical publications, tool prototyping and dissemination of research.

In recent years, Fernando has earned a PhD after extensive research, including the development of the open-source tool MultEcore and the publication of a PhD dissertation. More recently, he is involved in transferring research results regarding formal verification to both the aerospace industry and blockchain ecosystems.

Fernando holds a PhD in Informatics from the University of Oslo, Norway, and an MSc, Major and BSc from the University of Extremadura, Spain. He has lived in three countries and speaks English, Spanish and Norwegian.

Experience

Post-doc Researcher, IMDEA Software Institute, Madrid, Spain 2019–
Research on the state of the art and state of the practice of software reliability for embedded systems, with special focus on test generation, code analysis, model-based testing and symbolic execution.

Part-time Lecturer, Dep. of Information Systems Eng., University of Extremadura, Spain 2019

R&D Engineer, Homeria Open Solutions, Spain 2019

Guest Researcher, Dep. of Computer Science, Universidad Autónoma de Madrid, Spain 2017

PhD Research Fellow, Dep. of Software Engineering and Computing, Western Norway University of Applied Sciences, Norway 2015–2019
75% research on formal aspects of model-driven engineering. Development of MultEcore, a framework for multi-level modelling and multilevel model transformation founded on graph theory and category theory. 25% teaching, carrying out lab sessions and evaluating in courses at the Master level.

Lecturer, EITIE Plan for Innovation and Entrepreneurship, University of Extremadura, Spain 2013

Research Fellow, Quercus Software Engineering Group, University of Extremadura, Spain 2013–2015

Projects

Offchain Tezos RV, verification of high-level temporal properties on the Tezos blockchain 2022–

MFoC, techniques to improve the testing and verification of new-generation satellite systems 2019–2022

MultEcore, a tool for multilevel modelling and multilevel model transformation in EMF 2015–2019

MLM Rearchitecting, a tool for automatic rearchitecting of models into multilevel models 2017–2018

RV+MM, an approach to integrate runtime verification techniques into modelling processes 2016–2019

MoTES, a model transformation testing approach based in contracts 2013–2021

MIGRARIA, a model-driven reverse engineering & modernisation process of legacy web apps 2013–2015

Education

Philosophiae Doctor (PhD), Department of Informatics, University of Oslo, Norway 2019

Master of Science (MSc), D. of Information Systems Eng., University of Extremadura, Spain 2014
Master's research thesis distinction.

Science Major, Dep. of Information Systems Engineering, University of Extremadura, Spain 2013
Ten-month Erasmus scholarship in the Otto-Friedrich-Universität Bamberg, Germany. Senior research thesis distinction.

Bachelor of Science (BSc), D. of Information Systems Eng., University of Extremadura, Spain 2011

Languages

Mother tongue: **Spanish**, Fluent: **English**, Basic: **Norwegian**

Publications

30+ publications in peer-reviewed conferences and journals.