Matheus **Paixao**

SOFTWARE ENGINEERING RESEARCHER

🏠 mhepaixao.github.io/homepage

About Me

I am currently work as a researcher on R&D projects in the fields of software engineering, artificial intelligence and machine learning. I received my PhD degree from University College London, where I was supervised by Prof. Mark Harman and Dr Jens Krinke.

My research interests tend to revolve around software and repositories analysis. I find software engineering data fascinating due to its complexity, lack of structure and mix of technical and social aspects. My recent publications involve microservices, software architecture, software refactoring, modern code review, and mining software repositories. Search based software engineering has been my introduction to academia and it is a topic I cannot keep myself away from.

Formal Education

University College London   *London, UK*

PhD IN COMPUTER SCIENCE   *Oct. 2014 - Aug. 2018*

Thesis: **Software Restructuring: Understanding Longitudinal Architectural Changes and Refactoring**

State University of Ceara   *Fortaleza, Brazil*

MASTER'S IN COMPUTER SCIENCE   *Feb. 2012 - Jul. 2014*

Dissertation: **A Robust Optimisation Approach to the Next Release Problem**

Federal Institute of Education in Science and Technology   *Fortaleza, Brazil*

BACHELOR IN TELEMATICS   *Feb. 2009 - Nov. 2011*

Work Experience

University of Fortaleza   *Fortaleza, Brazil*

RESEARCHER   *Oct. 2019 - Dec. 2020*

- Part of the Lab. of Data Science and Artificial Intelligence
- Coordinates R&D projects involving industrial partners and government bodies
- Supervises Master's and PhD candidates on the topics of Software Engineering, Program Analysis and Software Biases

State University of Ceara   *Fortaleza, Brazil*

RESEARCH ASSISTANT   *Sep. 2018 - Sep. 2019*

- Part of the research and teaching staff of the Master's programme in computer science
- Taught Master's courses on Mining Software Repositories, Tools, Environments, Automation and DevOps
- Supervised a mixed group of Master's and undergraduate students

University College London   *London, UK*

PhD CANDIDATE   *Oct. 2014 - Ago. 2018*

- Thesis involved software architecture, software refactoring and mining software repositories
- Member of the CREST Centre
- Program Manager of the CREST Open Workshops

State University of Ceara   *Fortaleza, Brazil*

MASTER'S STUDENT   *Feb. 2012 - Jul. 2014*

- Dissertation involved search based software engineering and software requirements
- Member of the GOES research group

Teaching Experience

DevOps, Tools and Automation
State University of Ceara

LECTURER — *2019*

This is a course I created as part of my teaching activities as a research assistant at UECE. This course was targeted at Master's students in software engineering. During the course, the students were exposed to DevOps concepts, ranging from social to technical aspects. In addition, I taught and discussed the main activities in the software development lifecycle that are commonly automated. Finally, I presented a set of state-of-practice and state-of-the-art tools to assist in automation.

Mining Software Repositories
State University of Ceara

LECTURER — *2019*

This is a course I created as part of my teaching activities as a research assistant at UECE. This was a research-intensive course targeted at Master's students in software engineering. During the course, the students were exposed to a wide range of MSR-related topics, ranging from the basic building blocks of MSR research to the step-by-step process of conducting a MSR research project to presentations of recently published state-of-the-art papers.

Tools and Environments
University College London

TEACHING ASSISTANT — *2017*

This course was targeted at Bachelor's and Master's students in software engineering at UCL, in which the students were exposed to several tools to automate the software development process. I was responsible for the tools' lab demonstrations.

Software Systems Integration
University College London

TEACHING ASSISTANT — *2016*

This course was targeted at Bachelor's and Master's students in software engineering at UCL, in which the students were expected to develop a software system to a real-world external client. I was responsible to supervise two groups of students in all phases of the products' lifecycle. Both groups I supervised developed machine learning powered mobile apps for Microsoft UK.

Software Requirements and Architecture
University College London

TEACHING ASSISTANT — *2016*

This course was targeted at Bachelor's and Master's students in software engineering at UCL, in which the students were expected to elicit the requirements and design the architecture of a software system to be developed to a real-world external client. I was responsible to supervise the students in requirements elicitation and architecture design techniques. Both groups I supervised worked with clients from Microsoft UK.

Serving the Community

I included below a selected set of venues that I serve as editor or reviewer. For the full list of venues, please refer to my homepage (mhepaixao.github.io/homepage/)

Editorial

I serve as an **Associate Editor** of the Journal of Software Engineering Research and Development (JSERD), which is the prime journal publication of software engineering research in Brazil.

Journals

I SERVE AS A REVIEWER OF THE FOLLOWING JOURNALS:

- IEEE Transactions on Software Engineering
- Empirical Software Engineering
- ACM Transactions on Software Engineering and Methodology
- Journal of Systems and Software

Conferences

I HAVE SERVED (OR WILL SERVE) AS PROGRAM COMMITTEE MEMBER AND/OR REVIEWER OF THE FOLLOWING CONFERENCES:

- 18th International Conference on Mining Software Repositories 2021 **(PC Member)**
- 29th IEEE/ACM International Conference on Program Comprehension 2021 **(PC Member)**
- 28th IEEE/ACM International Conference on Program Comprehension 2020 **(PC Member)**
- 27th IEEE/ACM International Conference on Program Comprehension 2019 **(PC Member)**
- Genetic and Evolutionary Computation Conference 2018 **(SBSE PC Member)**

Full List of Publications

Behind the Intents: An In-depth Empirical Study on Software Refactoring in Modern Code Review (MSR'20)

Matheus Paixao, Anderson Uchôa, Ana Carla Bibiano, Daniel Oliveira, Alessandro Garcia, Jens Krinke, Emilio Arvonio

Working Conference on Mining Software Repositories

2020

Does Code Review Really Remove Coding Convention Violations? (SCAM'20)

DongGyun Han, Chaiyong Ragkhitwetsagul, Jens Krinke, Matheus Paixao, Giovanni Rosa

Source Code Analysis and Manipulation

2020

MDE in the Wild: An Exploratory Analysis on What Developers are Discussing on Q&A Platforms (SBES'20)

Carlos Alberto Medeiros, Alan Bandeira, Paulo Henrique Maia, Matheus Paixao

Brazilian Symposium on Software Engineering

2020

Using Stack Overflow to Assess Technical Debt Identification on Software Projects (SBES'20)

Eliakim Gama, Sávio Freire, Manoel Mendonça, Rodrigo O. Spínola, Matheus Paixao, Mariela I. Cortés

Brazilian Symposium on Software Engineering

2020

The Impact of Code Review on Architectural Changes (TSE)

Matheus Paixao, Jens Krinke, DongGyun Han, Chaiyong Ragkhitwetsagul, Mark Harman

IEEE Transactions on Software Engineering

2019

Toxic code snippets on Stack Overflow (TSE)

Chaiyong Ragkhitwetsagul, Jens Krinke, Matheus Paixao, Giuseppe Bianco, Rocco Oliveto

IEEE Transactions on Software Engineering

2019

We Need to Talk about Microservices: an Analysis from the Discussions on StackOverflow (MSR'19)

Alan Bandeira, Carlos Alberto Medeiros, Matheus Paixao, Paulo Henrique Maia

Working Conference on Mining Software Repositories

2019

Rebasing in Code Review Considered Harmful: A Large-scale Empirical Investigation (SCAM'19)

Matheus Paixao, Paulo Henrique Maia

Source Code Analysis and Manipulation

2019

An Empirical Study of Cohesion and Coupling: Balancing Optimisation and Disruption (TEVC)

Matheus Paixao, Mark Harman, Yuanyuan Zhang, Yijun Yu

IEEE Transactions on Evolutionary Computation

2018

CROP: Linking code reviews to source code changes (MSR'18)

Matheus Paixao, Jens Krinke, DongGyun Han, Mark Harman

Working Conference on Mining Software Repositories

2018

Who's this?: developer identification using IDE event data (MSR'18)

John Wilkie, Ziad Al Halabi, Alperen Karaoglu, Jiafeng Liao, George Ndungu, Chaiyong Ragkhitwetsagul, Matheus Paixao, Jens Krinke

Working Conference on Mining Software Repositories

2018

Are Developers Aware of the Architectural Impact of Their Changes? (ASE'17)

Matheus Paixao, Jens Krinke, DongGyun Han, Chaiyong Ragkhitwetsagul, Mark Harman

The 32nd IEEE/ACM International Conference on Automated Software Engineering

2017

An architecture based on interactive optimization and machine learning applied to the next release problem (ASE Journal)

Allysson Allex Araújo, Matheus Paixao, Italo Yeltsin, Altino Dantas, Jerffeson Souza

Automated Software Engineering

2017

A Hyper-heuristic for Multi-objective Integration and Test Ordering in Google Guava (SSBSE'17)

Giovani Guizzo, Mosab Bazargani, Matheus Paixao, John H Drake

International Symposium on Search Based Software Engineering

2017

Searching for configurations in clone evaluation–a replication study (SSBSE'16)

Chaiyong Ragkhitwetsagul, Matheus Paixao, Manal Adham, Saheed Busari, Jens Krinke, John H Drake

2016

International Symposium on Search Based Software Engineering

A robust optimization approach to the next release problem in the presence of uncertainties (JSS)

Matheus Paixao, Jerffeson Souza

2015

Journal of Systems and Software

Multi-objective module clustering for kate (SSBSE'15)

Matheus Paixao, Mark Harman, Yuanyuan Zhang

2015

International Symposium on Search Based Software Engineering

Machine learning for user modeling in an interactive genetic algorithm for the next release problem (SSBSE'14)

Allysson Allex Araújo, Matheus Paixao

2014

International Symposium on Search Based Software Engineering

A mapping study of the Brazilian SBSE community (JSERD)

Wesley KG Assunção, Márcio de O Barros, Thelma E Colanzi, Arilo C Dias-Neto, Matheus Paixao, Jerffeson T de Souza, Silvia R Vergilio

2014

Journal of Software Engineering Research and Development

A scenario-based robust model for the next release problem (GECCO'13, Invited for Journal Extension)

Matheus Paixao, Jerffeson Souza

2013

Annual conference on Genetic and Evolutionary Computation

A recoverable robust approach for the next release problem (SSBSE'13)

Matheus Paixao, Jerffeson Souza

2013

International Symposium on Search Based Software Engineering