

Matheus Paixao

SOFTWARE ENGINEERING RESEARCHER

🏠 mhepaixao.github.io/homepage

About Me

I currently work as a Visiting Scholar at the State University of Ceara (UECE). At UECE, I supervise Master's and PhD students, teach modules targeted at Grad students and act as a software engineer on R&D projects in collaboration with industry partners. 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

PHD IN COMPUTER SCIENCE

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

London, UK

Oct. 2014 - Aug. 2018

State University of Ceara

MASTER'S IN COMPUTER SCIENCE

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

Fortaleza, Brazil

Feb. 2012 - Jul. 2014

Federal Institute of Education in Science and Technology

BACHELOR IN TELEMATICS

Fortaleza, Brazil

Feb. 2009 - Nov. 2011

Work Experience

State University of Ceara

VISITING SCHOLAR

- Part of the research and teaching staff of the PhD programme in computer science
- Supervises a mixed group of Master's and undergraduate students
- Teaches Grad modules on Mining Software Repositories, Tools, Continuous Integration, Automation and DevOps
- Software engineer (tech leader) in R&D projects with industry collaborators

Fortaleza, Brazil

Jan. 2021 - PRESENT

University of Fortaleza

ASSISTANT PROFESSOR

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

Fortaleza, Brazil

Oct. 2019 - Dec. 2020

State University of Ceara

RESEARCH ASSISTANT

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

Fortaleza, Brazil

Sep. 2018 - Sep. 2019

University College London

PHD CANDIDATE

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

London, UK

Oct. 2014 - Aug. 2018

State University of Ceara

MASTER'S STUDENT

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

Fortaleza, Brazil

Feb. 2012 - Jul. 2014

Teaching Experience

DevOps, Tools and Automation

State University of Ceara

LECTURER

2019 - PRESENT

This is a course I created as part of my teaching activities as a visiting scholar at UECE. This course is targeted at Grad students in software engineering. During the course, the students are exposed to DevOps concepts, ranging from social to technical aspects. In addition, I teach and discuss the main activities in the software development lifecycle that are commonly automated. Finally, I present 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 - PRESENT

This is a course I created as part of my teaching activities as a visiting scholar at UECE. This is a research-intensive course targeted at Grad students in software engineering. During the course, the students are 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:

- 44th International Conference on Software Engineering 2022 (**SEIP PC Member**)
- 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

Assessing Exception Handling Testing Practices in Open-Source Libraries (EMSE)

LUAN LIMA, LINCOLN ROCHA, CARLA BEZERRA, MATHEUS PAIXAO

2021

Empirical Software Engineering

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

2020

ARVONIO

Working Conference on Mining Software Repositories

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

DONGGYUN HAN, CHAIYONG RAGKHITWETSAGUL, JENS KRINKE, MATHEUS PAIXAO, GIOVANNI ROSA

2020

Source Code Analysis and Manipulation

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

2020

Brazilian Symposium on Software Engineering

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

2020

Brazilian Symposium on Software Engineering

The Impact of Code Review on Architectural Changes (TSE)

MATHEUS PAIXAO, JENS KRINKE, DONGGYUN HAN, CHAIYONG RAGKHITWETSAGUL, MARK HARMAN

2019

IEEE Transactions on Software Engineering

Toxic code snippets on Stack Overflow (TSE)

CHAIYONG RAGKHITWETSAGUL, JENS KRINKE, MATHEUS PAIXAO, GIUSEPPE BIANCO, ROCCO OLIVETO

2019

IEEE Transactions on Software Engineering

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

2019

Working Conference on Mining Software Repositories

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

MATHEUS PAIXAO, PAULO HENRIQUE MAIA

2019

Source Code Analysis and Manipulation

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

MATHEUS PAIXAO, MARK HARMAN, YUANYUAN ZHANG, YIJUN YU

2018

IEEE Transactions on Evolutionary Computation

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

MATHEUS PAIXAO, JENS KRINKE, DONGGYUN HAN, MARK HARMAN

2018

Working Conference on Mining Software Repositories

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

JOHN WILKIE, ZIAD AL HALABI, ALPEREN KARAAGLU, JIAFENG LIAO, GEORGE NDUNGU, CHAIYONG RAGKHITWETSAGUL,

2018

MATHEUS PAIXAO, JENS KRINKE

Working Conference on Mining Software Repositories

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

MATHEUS PAIXAO, JENS KRINKE, DONGGYUN HAN, CHAIYONG RAGKHITWETSAGUL, MARK HARMAN

2017

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

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

2017

Automated Software Engineering

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
International Symposium on Search Based Software Engineering

2016

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

MATHEUS PAIXAO, JERFFESON SOUZA
Journal of Systems and Software

2015

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

MATHEUS PAIXAO, MARK HARMAN, YUANYUAN ZHANG
International Symposium on Search Based Software Engineering

2015

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

ALLYSSON ALLEX ARAÚJO, MATHEUS PAIXAO
International Symposium on Search Based Software Engineering

2014

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
Journal of Software Engineering Research and Development

2014

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

MATHEUS PAIXAO, JERFFESON SOUZA
Annual conference on Genetic and Evolutionary Computation

2013

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

MATHEUS PAIXAO, JERFFESON SOUZA
International Symposium on Search Based Software Engineering

2013