

Matheus Paixao

SOFTWARE ENGINEERING RESEARCHER · STATE UNIVERSITY OF CEARA

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About Me

I am currently a Research Assistant at the State University of Ceará (UECE), located in the city of Fortaleza, Brazil. At UECE, I am part of both research and teaching staff at the Master's program in computer science, where I supervise a mixed group of master's and undergrad students. Previously, I received my PhD degree from the 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.

Selected Publications

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

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

Serving the Community

Events Organisation

I HAVE BEEN THE PROGRAM MANAGER OF THE CREST OPEN WORKSHOP SERIES FROM 2015 TO 2018. MY RESPONSIBILITIES

INVOLVED:

- Inviting researchers to give talks
- Organise each workshop schedule
- Record the talks
- Archive the content

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
- ACM Transactions on Software Engineering and Methodology
- Journal of Systems and Software
- Information Software Technology
- Software Quality Journal
- IEEE IET Software
- IEEE Computational Intelligence Magazine
- Journal of Computer Science and Technology
- Journal of Software Evolution and Process
- Genetic Programming and Evolvable Machines
- Journal of Software Engineering Research and Development
- IEEE Access
- Brazilian Magazine of Information Systems

Conferences

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

- 27th IEEE/ACM International Conference on Program Comprehension 2019 (**PC Member**)
- 35th IEEE International Conference on Software Maintenance and Evolution 2019 (**Short Papers PC Member**)
- Genetic and Evolutionary Computation Conference 2018 (**SBSE PC Member**)
- 33rd IEEE/ACM International Conference on Automated Software Engineering 2018 (co-reviewer)
- 34th IEEE International Conference on Software Maintenance and Evolution 2018 (co-reviewer)
- 24th IEEE International Conference on Software Analysis, Evolution and Reengineering 2017 (co-reviewer)

Research Grants

National Council for Scientific and Technological Development

Brazil, 2018

MCTIC/CNPQ N° 28/2018 - UNIVERSAL/FAIXA A

£6,000.00

A self-adaptive approach for the development of resilient microservice-oriented applications

Work Experience

State University of Ceara

Fortaleza, Brazil

RESEARCH ASSISTANT

Sep. 2018 - PRESENT

- Part of the research and teaching staff of the Master's program in computer science
- Performs research in software engineering in collaboration with local and international collaborators
- Research topics include software analysis, microservices, and mining software repositories
- Teaches a Master's course on Mining Software Repositories
- Supervises 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 modern code review
- Member of the CREST Centre
- Program Manager of the CREST Open Workshops
- Teaching assistant for the courses: (i) Tools and Environments, (ii) Software Systems Integration and (iii) Software Requirements and Architecture.

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

Laboratório de Desenvolvimento de Softwares

Fortaleza, Brazil

SOFTWARE AND WEB DEVELOPER

Jun. 2010 - Ago. 2011

- Built a web-based app for large-scale printing simulations under a contract with HP Enterprise

Teaching Experience

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 is a research-intensive course targeted at Master's students in software engineering. During the course, the students are exposed to a wide range of MSR-related topics, ranging from conducting a MSR research project to presentations of recently published state-of-the-art papers.

Tools and Environments

TEACHING ASSISTANT

University College London

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

TEACHING ASSISTANT

University College London

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

TEACHING ASSISTANT

University College London

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.

Formal Education

University College London

PHD IN COMPUTER SCIENCE

London, UK

Oct. 2014 - Aug. 2018

Thesis: **Software restructuring: understanding longitudinal architectural changes and refactoring**

State University of Ceara

MASTER'S IN COMPUTER SCIENCE

Fortaleza, Brazil

Feb. 2012 - Jul. 2014

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

Ceara Federal Institute of Education in Science and Technology

BACHELOR IN TELEMATICS

Fortaleza, Brazil

Feb. 2009 - Nov. 2011

Full List of Publications

The Impact of Code Review on Architectural Changes (TSE)

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2018

Working Conference on Mining Software Repositories

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

JOHN WILKIE, ZIAD AL HALABI, ALPEREN KARAOGLU, 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

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

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

Improving the module clustering of ac/c++ editor using a multi-objective genetic algorithm (Technical Report)

MATHEUS PAIXAO, MARK HARMAN, YUANYUAN ZHANG

UCL Research Notes

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