Fabio Palomba, Ph.D.

Curriculum Vitae - 14th April 2025

1 Personal Information

Name: Fabio Palomba Address: Via Giovanni Falcone, 41

Date of Birth: 3rd August, 198984081 Baronissi (SA), ItalyPlace of Birth: Naples, ItalyPhone: +39 3477460798E-mail: fpalomba@unisa.it

Website: https://fpalomba.github.io/
Google Scholar profile: https://goo.gl/dorFrh

2 JOB POSITIONS

2025 – Associate Professor

now Department of Computer Science - University of Salerno, Italy

2023 - SENIOR ASSISTANT PROFESSOR (RTD-B)

2025 Department of Computer Science - University of Salerno, Italy

2019 - JUNIOR ASSISTANT PROFESSOR (RTD-A)

2022 Department of Computer Science - University of Salerno, Italy

2018 - SENIOR RESEARCH ASSOCIATE

2019 Zurich Empirical Software Engineering Team - University of Zurich, Switzerland

2017 POST-DOC RESEARCHER

Delft University of Technology (The Netherlands) and Eindhoven University of Technology (The Netherlands)

3 QUALIFICATIONS/LICENCES

2020 ITALIAN SCIENTIFIC QUALIFICATION AS FULL PROFESSOR.

Sector 01/B1 - Informatica.

Evaluation available at: https://asn18.cineca.it/pubblico/miur/esito-abilitato/01%252FB1/1/4.

2019 ITALIAN SCIENTIFIC QUALIFICATION AS FULL PROFESSOR.

Sector 09/H1 – Sistemi di Elaborazione delle Informazioni

Evaluation available at: https://asn18.cineca.it/pubblico/miur/esito-abilitato/09%252FH1/1/3.

2019 ITALIAN SCIENTIFIC QUALIFICATION AS ASSOCIATE PROFESSOR.

Sector 01/B1 – Informatica.

Evaluation available at: https://asn18.cineca.it/pubblico/miur/esito/01%252FB1/2/1.

2019 ITALIAN SCIENTIFIC QUALIFICATION AS ASSOCIATE PROFESSOR.

Sector 09/H1 – Sistemi di Elaborazione delle Informazioni

Evaluation available at: https://asn18.cineca.it/pubblico/miur/esito/09%252FH1/2/1.

2014 LICENCE OF COMPUTER ENGINEER

University of Molise, Italy

4 EDUCATION

2017 DEGREE OF EUROPEAN DOCTOR OF PHILOSOPHY (Ph.D.) IN MANAGEMENT & INFORMATION TECHNOLOGY

University of Salerno, Italy

Funded by University of Salerno and University of Molise.

Advisor: Prof. Andrea De Lucia

2013 MASTER'S DEGREE (M.Sc.) IN COMPUTER SCIENCE

University of Salerno, Italy

110/110 magna cum laude and special commendation by the commission

Advisor: Prof. Andrea De Lucia

2011 BACHELOR'S DEGREE (B.Sc.) IN COMPUTER SCIENCE

University of Molise, Italy 110/110 cum laude Advisor: Prof. Rocco Oliveto

5 RESEARCH

5.1 SUMMARY OF THE MAIN RESEARCH TOPICS AND ACHIEVEMENTS

My research activity is around Software Engineering and is mainly focused (but not limited) to the following topics:

- Bad Code Smell Detection and Management;
- Test Code Quality;
- Bug Prediction;
- Mobile Software Engineering;
- Social Aspects in Software Engineering;
- Traceability Management;
- Software Engineering with and for Artificial Intelligence;
- Mining Software Repositories;
- Empirical Software Engineering.

In these research topics I have published around 200 papers in international journals and conferences indexed in DBLP, SCOPUS (number of citations = 7,078; h-index = 48), and Google Scholar (number of citations = 11,659; h-index = 60). My overall m-index (that is, the h-index normalized by the number of years of activity) is 4.4 and 5 considering SCOPUS and Google Scholar, respectively. I have been the recipient of two ACM/SIGSOFT Distinguished Paper Awards, one IEEE/TCSE Distinguished Paper Award, one Best Paper Award Honorable Mention, multiple Best Paper Awards, and one bronze medal at the ACM/SIGSOFT Student Research Competition. Furthermore, my PhD Thesis has been the recipient of the 2017 IEEE Computer Society Best Thesis Award. In 2023, I was awarded the prestigious IEEE/TCSE Rising Star Award for my contribution to the research on software refactoring and code smell detection. In addition, I have been the recipient of 14 Outstanding/Distinguished Reviewer Awards for my review activities.

In the following, I describe the main research topics of interest with reference to the published or submitted results.

Bad Code Smell Detection and Management: Bad code smells have been defined by Martin Fowler as symptoms of poor design and implementation choices. Bad smells are usually introduced in software systems because developers poorly conceived the design of a code component. Complex Class, *i.e.*, a class that contain complex methods and it is very large in terms of LOC; or God Class, *i.e.*, a class that does too much/knows too much about other classes, are only some examples of a plethora of bad smells identified in well-known catalogues. Recent empirical studies showed that code smells hinder comprehensibility, and possibly increase change- and fault- proneness. For these reasons, the main research topics in this area are the definition of new approaches able to (i) detect bad code smells in the source code [C2, C5, C11, C19, J1]; (ii) study the

reason behind their introduction and removal [C4, J4, J8]; (iii) study the impact of code smells on non-functional attributes of source code [C3, C20, J7, J10, J11], and (iv) recommend their removal via appropriate refactoring operations [C1, C6, C21, J2].

Test Code Quality: Test cases form the first line of defense against the introduction of software faults. As such, with the help of testing framework like, for instance, Junit developers create test methods and run these periodically on their code. To support the testing activities, the research community mainly focused on the definition of techniques and tools for (i) the automatic generation of test cases, or (ii) the improvement of the effectiveness of test classes with respect to code coverage. In this context, a little knowledge on the impact and the usefulness of code quality is available. The main research topic in this area relates to the definition of quality-aware methodologies for the automatic generation of test cases [C12] and the investigation of the impact of test smells, i.e., symptoms of the presence of bad design choices in test code, on the effectiveness [C23] and the maintainability of test cases [C10, C14].

Bug Prediction: Allocating resources for the testing and the verification of all the parts of a large software system is a cost-prohibitive task. To alleviate this issue, prediction models able to identify portions of source code more prone to contain bugs have been the object of several studies. The main research topic is the definition of accurate prediction models that, on the one hand use a suitable set of predictors able to characterize the bug-proneness of code components [C8, C13, C25. J5], and on the other hand is able to use appropriate machine learning techniques to distinguish those components affected by bug [J6].

Mobile Software Engineering: According to recent statistics, over two billion users rely on smartphones and tablets to perform their daily activities. Not only do users play games or send messages, they use mobile apps for every type of need, including social and emergency connectivity. Mobile software engineering is the field responsible for the definition of techniques able to improve the life of both mobile developers and end users. The main research topic includes the application of mining software repositories techniques in the context of user reviews, with the goal of extracting actionable knowledge to incorporate in novel techniques and tools helping developers in performing their activities [C9, C16, C28, C29, J9].

Social Aspects in Software Engineering: The success of software engineering projects Is in large part dependent on social and organizational aspects of the development community. Indeed, as envisioned by the National Knowledge and Innovation Agenda ICT 2016 – 2019 in the Netherlands, "software and system complexity is not solely of technological nature but also defined by people and processes". In the context, the role played by social aspects in software engineering has been mainly investigated in terms of socio-technical congruence, i.e., the coordination between social relationships and technical aspects of the source code. However, a few knowledge on the impact of social debt, i.e., sub-optimal characteristics or patterns across the organizational structure around a software system that may lead to additional unforeseen project costs, is available [Grant-1]. Key research topics in this area regard the understanding of the interplay between social and technical debt [C27], as well as the definition of techniques and tools able to make developers and project managers aware of the presence of social debt in the community [J13].

Traceability Management: Traceability has been defined as "the ability to describe and follow the life of an artifact, in both a forwards and backwards direction". Thus, traceability links help software engineers to understand the relationships and dependencies among various software artifacts (requirements, code, tests, models, etc.) developed during the software lifecycle. The two main research topics related to the traceability management are event-based systems for traceability management and information retrieval-based methods and tools supporting the software engineer in the traceability link recovery [C9, C16, C29, J9].

Software Engineering with and for Artificial Intelligence: Software Engineering with and for Artificial Intelligence (AI) involves leveraging AI techniques and methodologies to enhance various aspects of software engineering processes and outcomes. The two main research areas relate to improving the way AI can assist developers during software engineering tasks [C85, J60-J62] and defining novel software engineering practices and instruments to enable trustworthy AI [C81, C84, J66]. In most cases, advances in these fields are driven by empirical analyses and experiments aiming at informing the synergies between software engineering and artificial intelligence [C82, C83, J67].

Mining Software Repositories: Software repositories such as source control systems, archived communications between project personnel, and defect tracking systems are used to help in managing the progress of software projects. Software practitioners and researchers recognize the benefits of mining this information to support the maintenance and the evolution of software systems by improving software design/reuse and empirically validating novel ideas and techniques. Research is now proceeding to uncover the ways in which mining these repositories can help to understand software development and software evolution [C2, C4, C5, C10, C11, C13, C14, C17, C20, C21, C22, J1-J14], to support predictions about software development [J5, J6, J10, J10], and to exploit this knowledge in planning future development [C9, C16, J7].

Empirical Software Engineering: Empirical software engineering is a sub-domain of software engineering focusing on experiments on software systems (software products, processes, and resources). It is interested in devising experiments on software [J1], in collecting data from these experiments [J3], and in devising laws and theories from this data [C4, C14, J4]. Proponents of experimental software engineering advocate that the nature of software is such that we can advance the knowledge on software through experiments only. The scientific method suggests a cycle of observations, laws, and theories to advance science. Empirical software engineering applies this method to software.

5.2 Ph.D. STUDENTS ADVISING/CO-ADVISING

I have/had the honour to advise or co-advise the following Ph.D. students and researchers:

2025 - MATTEO CICALESE

current Research Assistant at the University of Salerno, working on topics connected to the security of machine learning-enabled software systems. Co-advisor: Prof. Dario Di Nucci.

2024 - ALESSANDRA PARZIALE

current Research Assistant at the University of Salerno, working on topics connected to the fairness of machine learning-enabled software systems. Co-advisor: Prof. Andrea De Lucia.

2024 - ALFONSO CANNAVALE

current Research Assistant at the University of Salerno, working on topics connected to the testing of machine learningenabled software systems. Co-advisor: Prof. Andrea De Lucia.

2024 - ANTONIO DELLA PORTA

current Ph.D. Student at the University of Salerno, working on topics connected to the quality aspects of prompt engineering techniques for Large Language Models.

2023 - GIANMARIO VORIA

current Ph.D. Student at the University of Salerno, working on topics connected to the engineering of fairness properties in machine learning-enabled software systems.

2023 - VIVIANA PENTANGELO

current *Ph.D. Student at the University of Salerno, working on topics connected to the engineering of virtual reality and metaverse environments for educational purposes.*

2022 - ALEXANDRA SHEYKINA

current Research Assistant at the University of Salerno, working on topics connected to the engineering of security of machine learning-enabled software systems. Co-advisor: Prof. Andrea De Lucia.

2022 - GILBERTO RECUPITO

current Ph.D. Student at the University of Salerno, working on topics connected to the analysis, detection, and refactoring of artificial intelligence debt in machine learning-enabled software systems.

2022 - VINCENZO DE MARTINO

current Ph.D. Student at the University of Salerno, working on topics connected to the analysis and optimization of non-functional requirements in machine learning-enabled software systems.

2022 - DARIO DI DARIO

current Ph.D. Student at the University of Salerno, working on topics connected to the engineering of virtual reality and metaverse environments for educational purposes. Co-advisor: Prof. Carmine Gravino.

2022 - CARMINE FERRARA

Research Assistant at the University of Salerno, working on topics connected to the engineering of fairness properties in machine learning-enabled software systems. Co-advisor: Prof. Andrea De Lucia.

2021 - STEFANO LAMBIASE

2024 Ph.D. Student at the University of Salerno, working on topics connected to the analysis of software ecosystems, with a particular focus on socio-technical concerns. Co-advisor: Prof. Filomena Ferrucci.

2021 - GIULIA SELLITTO

2024 Ph.D. Student at the University of Salerno, working on topics connected to the use of meta-heuristics for the identification of software vulnerabilities. Co-advisor: Prof. Filomena Ferrucci.

2021 - VALERIA PONTILLO

2024 Ph.D. Student at the University of Salerno, working on topics connected to test code quality, with a particular focus on the use of artificial intelligence for the identification of flaky tests. Co-advisor: Prof. Filomena Ferrucci.

2021 - GIAMMARIA GIORDANO

2024 Ph.D. Student at the University of Salerno, working on topics connected to the identification of privacy concerns in software projects using artificial intelligence techniques. Co-advisor: Prof. Filomena Ferrucci.

2020 - EMANUELE IANNONE

2024 Ph.D. Student at the University of Salerno, working on topics connected to the analysis and automated detection/refactoring of software vulnerabilities.

2020 - MANUEL DE STEFANO

2024 Ph.D. Student at the University of Salerno, working on topics connected to the code smell detection and refactoring. Co-advisor: Prof. Andrea De Lucia

2019 - LARISSA BRAZ

2022 Ph.D. Student at the University of Zurich, working on topics connected to the software testing and vulnerabilities - hired under the Ambizione project of which I am scientific coordinator. Co-advisor: Prof. Alberto Bacchelli.

2019 - FABIANO PECORELLI

2021 Ph.D. Student at the University of Salerno, working on topics connected to software testing and code smell detection. Co-advisor: Prof. Andrea De Lucia.

2018 - GIOVANNI GRANO

2020 Ph.D. Student at the University of Zurich, working on topics connected to software testing. I had the role of mentor in the context of the Giovanni's Ph.D. The official advisor was Prof. Harald C. Gall.

6 TEACHING

Note: All activities conducted in or after 2023 relate to my contract as a Senior Assistant Professor (art. 24, comma 3, lett. b). Activities conducted before 2023 relate to my previous contracts. Additionally, all activities after 2019 were conducted following the acquisition of the Italian Scientific Qualification as Associate Professor (Sector 01/B1 – Informatica).

6.1 LECTURER

2024 - SOFTWARE PROJECT MANAGEMENT

current Co-lecturer at the Master's Degree of Computer Science at the University of Salerno.

2023 - SCIENTIFIC WRITING AND PUBLISHING

current Lecturer at the Ph.D. Degree of Computer Science at the University of Salerno.

2022 - EMPIRICAL RESEARCH METHODS

2023 Lecturer at the Ph.D. Degree of Computer Science at the University of Salerno.

2021 - SOFTWARE ENGINEERING FOR ARTIFICIAL INTELLIGENCE

current Lecturer at the Master's Degree of Computer Science at the University of Salerno.

2021 - SOFTWARE ENGINEERING

current Co-lecturer at the Bachelor's Degree of Computer Science at the University of Salerno.

2020 - Ph.D. 101: A SEMINAR CYCLE

current Lecturer at the Ph.D. Degree of Computer Science at the University of Salerno.

2020 - FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE

current Lecturer at the Bachelor's Degree of Computer Science at the University of Salerno.

2018 - SOFTWARE DEPENDABILITY

2022 Lecturer at the Master's Degree of Computer Science at the University of Salerno.

2018 - SOFTWARE TESTING

2019 Co-Lecturer at the Bachelor's and Master's Degrees (joint course) of Computer Science at the University of Zurich.

2018 - ADVANCED SOFTWARE ENGINEERING

2019 Lecturer at the Bachelor's Degree of Computer Science at the University of Zurich.

2017 - SOFTWARE ENGINEERING METHODS

2018 Co-Lecturer at the Bachelor's Degree of Computer Science at the Delft University of Technology.

6.2 TEACHING ASSISTANCE

2016 PROGRAMMING LANGUAGES

Teaching Assistant in the course of Prof. Maurizio Tucci at the Bachelor Degree of Computer Science at the University of Salerno

2016 PROGRAMMING LANGUAGES II

Teaching Assistant in the course of Prof. Carmine Gravino at the Bachelor Degree of Computer Science at the University of Salerno

2016 SOFTWARE ENGINEERING II: MAINTENANCE, EVOLUTION, AND SOFTWARE PROJECT MANAGEMENT

Teaching Assistant and Students' Projects Evaluator in the course of Prof. Andrea De Lucia at the Master Degree of Computer Science at the University of Salerno

2016 SOFTWARE ENGINEERING I

Teaching Assistant and Students' Projects Evaluator in the course of Prof. Andrea De Lucia at the Bachelor Degree of Computer Science at the University of Salerno

2015 SOFTWARE ENGINEERING II: MAINTENANCE AND TESTING

Teaching Assistant and Students' Projects Evaluator in the course of Prof. Andrea De Lucia at the Master Degree of Computer Science at the University of Salerno

2015 SOFTWARE ENGINEERING I

Teaching Assistant and Students' Projects Evaluator in the course of Prof. Andrea De Lucia at the Bachelor Degree of Computer Science at the University of Salerno

2014 IT PROJECT AND SERVICE MANAGEMENT

Teaching Assistant and Students' Projects Evaluator in the course of Prof. Andrea De Lucia at the Master Degree of Management and Information Technology at the University of Salerno

2014 DECISION SUPPORT SYSTEMS

Teaching Assistant and Students' Projects Evaluator in the course of Prof. Andrea De Lucia at the Master Degree of Business Economy at the University of Salerno.

6.3 THESES ADVISING/CO-ADVISING

2024 I am currently the advisor of, or I advised, around 60 Bachelor's and Master's students on themes connected to software engineering, maintenance, and evolution, artificial intelligence, and empirical software engineering. The complete list will be available upon request.

I am currently the advisor of, or I advised, around 100 Bachelor's and Master's students on themes connected to software engineering, maintenance, and evolution, artificial intelligence, and empirical software engineering. The complete list will be available upon request.

2022 I advised around 100 Bachelor's and Master's students on themes connected to software engineering, maintenance, and evolution, artificial intelligence, and empirical software engineering. The complete list is available upon request.

2021 In 2021, I had the pleasure to advise 14 Bachelor's and Master's students: Ivan Carmine Adamo, Angelo Afeltra, Cristian Barletta, Roberto Esposito, Simone Farina, Emanuele Fittipaldi, Emanuele Iaccarino, Vincenzo Emanuele Martone, Nicola Pagliara, Paolo Petta, Raimondo Rapacciuolo, Antonio Russo, Amine Mohamed Sarraj, Hermann Senatore.

2020 CATCH ME IF YOU CAN: TOWARD AUTOMATIC EXPLOIT OF KNOWN VULNERABILITIES

Student: Emanuele Iannone.

Master Thesis – University of Salerno, Italy.

2020 UNDERSTANDING ARCHITECTURAL SMELLS: A NOVEL TOOL AND A FAMILY OF EMPIRICAL STUDIES

Student: Manuel De Stefano. Advisor: Prof. Andrea De Lucia.

Master Thesis - University of Salerno, Italy.

2019 CLASSIFYING SOURCE CODE QUALITY IMPROVEMENT OPPORTUNITIES IN CONTINUOUS INTEGRATION

Student: Jonas Klass. Advisor: Prof. Alberto Bacchelli. Master Thesis – University of Zurich, Switzerland.

2019 LAMBDIFIED JAVA APIs: THE DEVELOPER'S PERSPECTIVE

Student: Fernando Petrulio. Advisor: Prof. Alberto Bacchelli.

Master Thesis – Joint project between University of Zurich, Switzerland, and University of Salerno, Italy.

2019 THE SECRET LIFE OF SOFTWARE VULNERABILITIES: AN EMPIRICAL STUDY

Student: Roberta Guadagni. Advisor: Prof. Alberto Bacchelli.

 ${\it Master Thesis-Joint project between University of Zurich, Switzerland, and University of Salerno, Italy.}$

2019 ON THE EFFECTIVENESS OF MANUAL AND AUTOMATIC UNIT TEST GENERATION: TEN YEARS LATER

Student: Domenico Serra.

Master Thesis – Joint project between University of Zurich, Switzerland, and University of Salerno, Italy.

2018 CLASSIFYING THE ROOT CAUSE OF FLAKY TESTS

Student: Moritz Eck. Advisor: Prof. Alberto Bacchelli Master Thesis – University of Zurich, Switzerland

2017 DETECTING CODE SMELLS IN MOBILE APPLICATIONS

Students: Dustin Lim. Advisor: Prof. Andy Zaidman

Master Thesis – Delft University of Technology, The Netherlands

2017 A FRAMEWORK FOR THE UI TESTING OF ANDROID AND IOS APPLICATIONS

Students: René Vennik and Wim de With.

Bachelor End Project - Delft University of Technology, The Netherlands

2016 A LARGE SCALE EMPIRICAL STUDY ON THE PERFORMANCES OF WITHIN- AND CROSS-PROJECT BUG PREDICTION MODELS

Student: Salvatore Geremia. Advisor: Prof. Andrea De Lucia

Master Thesis - University of Salerno, Italy

2016 A TOOL FOR MINING PERFORMANCE INDICATORS OF JAVA APPLICATIONS

Student: Elisa D'Eugenio. Advisor: Prof. Andrea De Lucia

Master Thesis – University of Salerno, Italy

2016 Design and Implementation of a Tool for Experimenting Cross-Project Bug Prediction Models

Student: Pasquale Martiniello. Advisor: Prof. Andrea De Lucia

Bachelor Thesis – University of Salerno, Italy

2016 USING RANKING ALGORITHMS IN MINING USER REVIEWS: CHALLENGES AND OPPORTUNITIES

Student: Michele Lotierzo. Advisor: Prof. Andrea De Lucia

Bachelor Thesis - University of Salerno, Italy

2016 Design and Implementation of a Tool for Detecting Textual Code Smells in Source Code

Student: Elena Sollai. Advisor: Prof. Andrea De Lucia Bachelor Thesis — University of Salerno, Italy

2016 DESIGN AND IMPLEMENTATION OF A TOOL FOR RUNNING BUG PREDICTION EXPERIMENTATIONS

Student: Fabiano Pecorelli. Advisor: Prof. Andrea De Lucia

Bachelor Thesis – University of Salerno, Italy

2015 MINING ENERGETIC CODE SMELLS IN ANDROID APPS

Student: Antonio Prota. Advisor: Prof. Andrea De Lucia

Master Thesis – University of Salerno, Italy

2015 REFACTORING OF CODE SMELLS: AN EMPIRICAL STUDY

Student: Fabio Soggia. Advisor: Prof. Andrea De Lucia

Master Thesis – University of Salerno, Italy

2015 AN ECLIPSE PLUG-IN FOR SUPPORTING CODE SMELL IDENTIFICATION VIA HISTORICAL INFORMATION: THE HIST PROJECT

Student: Alessandro Longo. Advisor: Prof. Andrea De Lucia

Bachelor Thesis - University of Salerno, Italy

2014 On the Role of Developers' Scattering Metrics in Bug Prediction

Student: Dario Di Nucci. Advisor: Prof. Andrea De Lucia

Master Thesis - University of Salerno, Italy

2014 DESIGN AND IMPLEMENTATION OF AN ECLIPSE PLUG-IN FOR EXTRACTING ISSUES FROM THE BUGZILLA REPOSITORY

Student: Davide De Chiara. Advisor: Prof. Andrea De Lucia

Bachelor Thesis - University of Salerno, Italy

2014 DESIGN AND IMPLEMENTATION OF AN ECLIPSE PLUG-IN FOR MINING GITHUB

Student: Santolo Tubelli. Advisor: Prof. Andrea De Lucia

Bachelor Thesis - University of Salerno, Italy

2014 DESIGN AND IMPLEMENTATION OF AN ECLIPSE PLUG-IN FOR EXTRACTING QUALITY METRICS FROM SOURCE CODE

Student: Gianmarco Del Pozzo. Advisor: Prof. Andrea De Lucia

Bachelor Thesis - University of Salerno, Italy

7 Professional Activities

7.1 COMMUNITY SHEPHERDING ACTIVITIES

2025- CHAIR OF THE ACM/SIGSOFT CAPS PROGRAM

2028 Chair of the ACM/SIGSOFT Travel Support and Childcare Assistance at Conferences Program (CAPS, https://www2.sigsoft.org/caps/capsmain/). The program aims at providing support for students and professionals to attend the conferences and events sponsored by ACM SIGSOFT. CAPS also provides support for childcare. My role is to define and apply a process for ranking applications for students to attend SIGSOFT-sponsored conferences to receive travel funding.

7.2 STEERING COMMITTEE MEMBERSHIPS

2021- ICPC – THE INTERNATIONAL CONFERENCE ON PROGRAM COMPREHENSION

2024 Steering Committee Member – Elected in 2021.

2020- MALTESQUE - THE INTERNATIONAL WORKSHOP ON MACHINE LEARNING TECHNIQUES FOR SOFTWARE QUALITY EVALUATION

current Steering Committee Member – Elected in 2020.

7.3 Organization Committee Participation (selected)

2025 PROGRAM COMMITTEE MEMBER

ACM Conference on the Foundations of Software Engineering (ESEC/FSE), Trondheim, Norway.

2025 PROGRAM COMMITTEE MEMBER

International Conference on Software Engineering (ICSE), Ottawa, Canada.

2025 PROGRAM COMMITTEE MEMBER

IEEE International Conference on Software Analysis, Engineering, and Reengineering (SANER 2025), Montreal, Canada.

2025 PROGRAM COMMITTEE MEMBER

International Conference on Mining Software Repositories (MSR 2025), Ottawa, Canada.

2025 PROGRAM COMMITTEE MEMBER

International Conference on Program Comprehension (ICPC 2025), Ottawa, Canada.

2024 SHONAN MEETING ORGANIZER

Organizer of a Shonan Meeting on "Anti-patterns and Defects: Synergies, Challenges, and Opportunities", Shonan, Japan.

2024 PROGRAM COMMITTEE MEMBER

ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), Singapore.

2024 PROGRAM COMMITTEE MEMBER

International Conference on Automated Software Engineering (ASE), Sacramento, USA.

2024 LOCAL ARRANGEMENT CO-CHAIR

 $17^{th}\ International\ Conference\ on\ Evaluation\ and\ Assessment\ in\ Software\ Engineering\ (EASE\ 2024),\ Salerno,\ Italy.$

2024 PROGRAM CO-CHAIR

IEEE International Conference on Software Analysis, Engineering, and Reengineering (SANER 2024), Rovaniemi,

Finland.

2023 ASSOCIATE CHAIR

ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2023), Minneapolis, USA.

2023 PROGRAM COMMITTEE MEMBER

The Genetic and Evolutionary Computation Conference (GECCO), Lisbon, Portugal.

2023 PROGRAM COMMITTEE MEMBER

ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), Singapore.

2023 PROGRAM COMMITTEE MEMBER

International Conference on Software Engineering (ICSE), Melbourne, Australia.

2022 PROGRAM CO-CHAIR

Working Seminar on Quantum Software Engineering (WQSE 2022), Innsbruck, Austria.

2022 PROGRAM CO-CHAIR

International Workshop on Software Quality Assurance for Artificial Intelligence (SQ4AI 2021), Honolulu, Hawaii, USA

2022 New Ideas and Emerging Results (NIER) Track Co-Chair

International Conference on Automated Software Engineering (ASE 2022), Ann Arbor, Michigan, USA

2022 New Ideas and Emerging Results (NIER) Track Co-Chair

International Conference on Mobile Software Engineering and Systems (MobileSoft 2022), Pittsburgh, Pennsylvania, USA

2022 NEW IDEAS AND EMERGING RESULTS (NIER) TRACK CO-CHAIR

International Conference on Source Code Analysis and Manipulation (SCAM 2022), Limassol, Cyprus

2022 FOSS Award Co-Chair

International Conference on Mining Software Repositories (MSR 2022), Pittsburgh, Pennsylvania, USA

2022 INDUSTRIAL TRACK CO-CHAIR

International Conference on Software Analysis, Evolution, and Reengineering (SANER 2022), Honolulu, Hawaii, USA

2021 PROGRAM CO-CHAIR

International Conference on Program Comprehension (ICPC 2021), Madrid, Spain

2021 SPECIAL ISSUE CHAIR

International Conference on Open-Source Systems (OSS 2021), Lahti, Finland

2021 ASSOCIATE CHAIR

ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2021), Virtual

2021 PROGRAM COMMITTEE MEMBER

International Conference on Automated Software Engineering (ASE 2021), Melbourne, Australia

2021 PROGRAM COMMITTEE MEMBER

International Conference on Software Analysis, Evolution, and Reengineering (SANER 2021), Virtual

2020 PROGRAM COMMITTEE MEMBER

International Conference on Software Analysis, Evolution, and Reengineering (SANER 2020), London, Canada

2020 PROGRAM COMMITTEE MEMBER

International Conference on Software Maintenance and Evolution (ICSME 2020), Adelaide, Australia

2020 PROGRAM COMMITTEE MEMBER

International Conference on Automated Software Engineering (ASE 2020), Melbourne, Australia

2020 PROGRAM COMMITTEE MEMBER

International Conference on Mining Software Repositories (MSR 2020), Seoul, South Korea

2020 PROGRAM COMMITTEE MEMBER

International Conference on Program Comprehension (ICPC 2020), Seoul, South Korea

2019 CO-ORGANIZER

International Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTeSQuE 2019), Tallinn, Estonia

2019 PROGRAM COMMITTEE MEMBER

International Conference on Software Maintenance and Evolution (ICSME 2019), Cleveland, USA

2019 PROGRAM COMMITTEE MEMBER

International Conference on Program Comprehension (ICPC 2019), Montreal, Canada

2019 PROGRAM COMMITTEE MEMBER

International Conference on Mining Software Repositories (MSR 2019), Montreal, Canada

2019 PROGRAM COMMITTEE MEMBER

International Conference on Mobile Software Engineering and Systems (MobileSoft 2019), Montreal, Canada

2019 PROGRAM COMMITTEE MEMBER

International Conference on Software Analysis, Evolution, and Reengineering (SANER 2019), Hangzhou, China

2018 PROGRAM CO-CHAIR

Workshop on Machine Learning Techniques for Software Quality Evaluation (MaLTeSQuE 2018), Campobasso, Italy

2018 PROGRAM COMMITTEE MEMBER

International Conference on Program Comprehension (ICPC 2018), Gothenburg, Sweden

2018 PROGRAM COMMITTEE MEMBER

International Conference on Mining Software Repositories (MSR 2018), Gothenburg, Sweden

2018 PROGRAM COMMITTEE MEMBER

International Conference on Software Analysis, Evolution, and Reengineering (SANER 2018), Campobasso, Italy

2018 PUBLICITY CO-CHAIR

International Conference on Software Analysis, Evolution, and Reengineering (SANER 2018), Campobasso, Italy

2017 PROGRAM COMMITTEE MEMBER

International Conference on Software Maintenance and Evolution (ICSME 2017), Shanghai, China

2017 PROGRAM COMMITTEE MEMBER

International Workshop on Technical Debt Analytics (TDA 2016), Hamilton, New Zealand

2017 PROGRAM COMMITTEE MEMBER

International Conference on Program Comprehension (ICPC 2016), Buenos Aires, Argentina

2017	Program Committee Member International Conference on Software Engineering and Advances (ICSEA 2017), Vienna, Austria
2016	Program Committee Member International Workshop on Machine Learning Techniques in Software Quality Evaluation, Wroclaw, Polish
2016	Scientific Secretariat International Summer School on Software Engineering (ISSSE), University of Salerno
2016	STUDENT VOLUNTEER International Conference on Software Engineering (ICSE 2016), Austin, USA
2015	PROGRAM COMMITTEE MEMBER International Conference on Software Engineering and Advances (ICSEA 2016), Rome, Italy
2015	PROGRAM COMMITTEE MEMBER Working Conference on Mining Software Repositories – Mining Challenge Track (MSR 2016), Austin, Texas
2015	PROGRAM COMMITTEE MEMBER International Conference on Software Engineering and Advances (ICSEA 2015), Barcelona, Spain
2014	Web Chair International Conference on Program Comprehension (ICPC 2015), Florence, Italy
2014	Student Volunteer International Conference on Software Engineering (ICSE 2015), Florence, Italy
2014	Scientific Secretariat International Summer School on Software Engineering (ISSSE), University of Salerno
7.4 Jo	DURNAL SERVICES
2024- current	Member of the Board of Distinguished Reviewers – ACM Transactions on Software Engineering and Methodology (TOSEM)
2022 - current	Associate Editor – Elsevier's Information and Software Technology (IST)
2022	Guest Editor – Elsevier's Journal of Systems and Software (JSS) Special Issue on "Software Evolution, Engineering, and Reengineering in Practice"
2021 - current	ASSOCIATE EDITOR — SPRINGER'S JOURNAL OF EMPIRICAL SOFTWARE ENGINEERING (EMSE)
2021	Guest Editor – Springer's Journal of Empirical Software Engineering (EMSE) Special Issue on "Program Comprehension"
2021 - current	ASSOCIATE EDITOR — E-INFORMATICA SOFTWARE ENGINEERING JOURNAL (E-INFORMATICA)
2020 - 2023	Review Board Member – IEEE Transactions on Software Engineering (TSE)
2020 - 2023	ASSOCIATE EDITOR — ELSEVIER'S JOURNAL OF SYSTEMS AND SOFTWARE (JSS)

2019 - EDITORIAL ASSISTANT — ELSEVIER'S SCIENCE OF COMPUTER PROGRAMMING (SCIC	(O)
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current

2019 - SOCIAL MEDIA DIRECTOR – ACM TRANSACTIONS ON SOFTWARE ENGINEERING AND METHODOLOGY (TOSEM)

2022

2019 - EDITORIAL BOARD MEMBER — ELSEVIER'S JOURNAL OF SYSTEMS AND SOFTWARE (JSS)

2020

2019 GUEST EDITOR – ELSEVIER'S JOURNAL OF SYSTEMS AND SOFTWARE (JSS)

Special Issue on "Machine Learning Techniques for Software Quality Evaluation"

2018 GUEST EDITOR – SPRINGER'S JOURNAL OF EMPIRICAL SOFTWARE ENGINEERING (EMSE)

Special Issue on "Mobile Software Engineering"

2018 GUEST EDITOR – WILEY'S JOURNAL OF SOFTWARE MAINTENANCE AND EVOLUTION (JSEP)

Special Issue on "Machine Learning Techniques for Software Quality Evaluation"

2017 - REVIEW BOARD MEMBER – SPRINGER'S JOURNAL OF EMPIRICAL SOFTWARE ENGINEERING (EMSE)

current

2016 - REFERE ACTIVITIES

Referee for:

current

- TSE: IEEE Transactions on Software Engineering (100+ reviews);
- TOSEM: ACM Transactions on Software Engineering and Methodology (30+ reviews);
- EMSE: Springer's Empirical Software Engineering (100+ reviews);
- IST: Elsevier's Information and Software Technology (20+ reviews);
- JSS: Elsevier's Journal of Systems and Software (70+ reviews);
- SCICO: Elsevier's Science of Computer Programming Journal (30+ reviews).

7.5 INVITED SPEAKER

2024 F. Palomba.

Toward Next-Generation Automated Test Code Quality Analysis

9th Brazilian Symposium on Systematic and Automated Software Testing (SAST 2024), Curitiba, Brazil, September 30th.

2024 F. Palomba.

Technical Debt in the AI Era: A TechDebt's Offer AI Can't Refuse

7th ACM/IEEE International Conference on Technical Debt (TechDebt 2024), Lisbon, Portugal, April 15th.

2022 F. Palomba.

Mining Software Repositories for Vulnerability Prediction: Challenges, Lessons Learned, and Recommendations International Summer School on Security Testing and Verification, Leuven, Belgium, September 22nd.

2022 F. Palomba.

Technical Debt: The Road Ahead

Polish Conference on Software Engineering, September 15th.

2020 F. Palomba.

Artificial Intelligence, This Unknown.

Virtual Annual Conference on Geospatial Big Data, December 21th.

2020 F. Palomba.

Mutation Testing Meets Software Analytics: A Hands-On Tutorial.

15th International Conference on Mining Software Repositories (MSR 2020) – Education Track, June 30th.

2019 F. Palomba.

Test Code Quality: A New Dimension of Test Code Effectiveness.

10th International Workshop on Empirical Software Engineering in Practice (IWESEP), Tokyo University of Technology, December 13th.

2019 F. Palomba.

Software Design 101: Improving the Design of Existing Code, Tests, and Communities. 14th International Summer School on Software Engineering, University of Salerno, June 17th.

2019 F. Palomba.

Software Design 101: Improving the Design of Existing Code, Tests, and Communities.

2nd International Summer School on Software Engineering, Tampere University of Technology, June 6th.

2018 F. Palomba.

Managing Source Code Quality in Mobile Applications.

4th International Summer School on Software Engineering, Free-University of Bolzano, July 10th.

2018 F. Palomba.

Exploiting Machine Learning Techniques for the Automatic Identification of Code Smells

1st International Summer School on Machine Learning, Eindhoven University of Technology, July 20th

2018 F. Palomba.

Machine Learning for Mobile Applications.

IFI Summer School on Machine Learning, University of Zurich, June 28th.

2017 F. Palomba.

Does Refactoring of Test Smells Induce Fixing Flaky Tests?

CREST Open Workshop organized by the University College of London, November 27th.

2017 F. Palomba.

Not Only Maintainability: Revisiting Test Smells as a Measure of Test Code Effectiveness.

IPA Fall Days on System and Software Analysis organized by the CWI institute, Nunspeet (The Netherlands),

November 8th

2016 F. Palomba.

Mining Version Histories for Detecting Code Smells.

CREST Open Workshop organized by the University College of London, November 29th.

2015 F. Palomba.

Using Alternative Sources of Information for Smell Detection.

Delft University of Technology, October 23rd.

2014 F. Palomba

Software Metrics and Antipatterns: Challenges and Solution

University of Molise, November, 12nd.

7.6 GUEST LECTURER

2024 F. Palomba.

Software Engineering with and for Artificial Intelligence

Advanced Ph.D. Course at the Gran Sasso Science Institute, June 24-27

2020 F. Palomba.

On Code and Test Smells

Software Modeling and Analysis Course at the University of Bern, November 4th

2017 F. Palomba.

Code Smells: Relevance of the Problem and Novel Detection Techniques

Software Maintenance and Evolution Course at the University of Zurich, December 8th

2017 F. Palomba.

Mining User Reviews to Support the Evolution of Mobile Applications.

Green Lab at the University of Amsterdam, October 19th

2017 F. Palomba.

Mining User Reviews to Support the Evolution of Mobile Applications.

Mining Software Repositories Course at the Delft University of Technology, September 26th

2016 F. Palomba.

The Back-end Side of Compilers.

Software Engineering Course at the University of Salerno, June 4th

2016 F. Palomba

Bug Prediction: An Overview.

Software Engineering Course at the University of Salerno, May 27th

2016 F. Palomba.

Code Smell Detection and Refactoring Automation.

Software Engineering Course at the University of Salerno, May 19th

7.7 HIRING COMMITTEES

2019 HIRING COMMITTEE MEMBER OF AN ASSISTANT PROFESSOR ON BIG DATA SCIENCE

Designed member of the hiring committee for a position of Assistant Professor at the University of Zurich. In this committee, I was designed as the delegate of the Senior Research Associates.

2019 HIRING COMMITTEE MEMBER OF AN ASSOCIATE PROFESSOR ON ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Designed member of the hiring committee for a position of Assistant Professor at the University of Zurich. In this committee, I was designed as the delegate of the Senior Research Associates.

7.8 RESEARCH GRANT COMMITTEES

2023 REVIEWER FOR THE SWISS SPECIAL CALL JAPAN PROGRAM

Reviewer of research proposals submitted for collaborative research proposals between Japan and Switzerland.

2023 REVIEWER FOR THE DUTCH RESEARCH COUNCIL (NWO) GRANTS PROGRAM

Expert Reviewer of research proposals submitted for funding request to the Dutch Research Council.

2022 Member of the Swiss National Science Foundation (SNSF) Grants Program

Member of the selection committee of research proposals submitted to the Mathematical, Physical, and Engineering Sciences Division of the SNSF Grants Program, which aimed at promoting Swiss researchers.

2022 MEMBER OF THE NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA (NSERC) DISCOVERY GRANTS PROGRAM

Member of the selection committee of research proposals submitted to the Engineering Section of the NSERC Discovery Grants Program, which aimed at promoting the research of young researchers.

2021 Member of the Research Grant Committee of the Free University of Bozen-Bolzano

Member of the selection committee of research proposals submitted to the Internal Research Grant Program, which aimed at promoting interdisciplinary research of researchers at the Free University of Bozen-Bolzano.

- 2021 MEMBER OF THE NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA (NSERC) DISCOVERY GRANTS PROGRAM Member of the selection committee of research proposals submitted to the Engineering Section of the NSERC Discovery Grants Program, which aimed at promoting the research of young researchers.
- 2019 Member of the Academy of Finland Research Program on "Programmable World and Advanced Software Techniques"

 Member of the selection committee of research proposals submitted to the "Programmable World and

 Advanced Software Technologies" research program, which aimed at promoting new research directions of

 senior researchers located in Finland or that were planning to move to Finland.
- 2019 Member of the Croatian Science Foundation Research Program on "Business Software Projects: Critical Factors, Modelling, and Perspectives"

Member of the selection committee of research proposals submitted to the "Business Software Projects: Critical Factors, Modelling, and Perspectives" research program, which aimed at promoting new research directions of both young and senior researchers located in Croatia.

7.9 Ph.D. Committee Juries

- 2025 MEMBER OF THE PH.D. COMMITTEE OF THE PH.D. IN "COMPUTER SCIENCE" (UNIVERSITY OF PORTO, PORTUGAL)

 External Ph.D. Committee Member of the Ph.D. defense of Dr. Dr. Sara Filipa Couto Fernandes, entitled: "A Live Environment for Continuous Software Inspection and Refactoring". Date: May 5th, 2025.
- 2023 MEMBER OF THE PH.D. COMMITTEE OF THE PH.D. IN "INFORMATION AND COMMUNICATION TECHNOLOGY" (UNIVERSITY OF L'AQUILA, ITALY)

 External Ph.D. Committee Member of the Ph.D. defenses of Dr. Roberta Capuano, Dr. Gianluca Filippone, and Dr. Claudio Di Sipio. Date: July 26th, 2023.
- 2023 MEMBER OF THE PH.D. COMMITTEE OF DR. MICHEL MAES BERMEJO (UNIVERSIDAD REY JUAN CARLOS, SPAIN)

 External Ph.D. Committee member of the dissertation thesis developed by Dr. Michel Maes Bermejo, entitled:

 "Hunting Bugs: A Study of the Change History of Open-Source Projects and Its Application to the Detection of How These Changes Introduce Bugs". Date: June 30th, 2023.
- MEMBER OF THE PH.D. COMMITTEE OF THE PH.D. IN "TECHNOLOGIES FOR COMPUTER ENGINEERING" (UNIVERSITY OF SANNIO, ITALY)
 External Ph.D. Committee Member of the Ph.D. defenses of Dr. Anna Vacca and Dr. Martina lammarino. Date:
 February 1st, 2023.
- 2022 Invited Honorary Member of the Ph.D. Committee of Dr. Mohamed Sofien Boutaib (University of Tunis, Tunisia)
 Honorary member of the dissertation thesis developed by Dr. Mohamed Sofien Boutaib, entitled: "Search-Based Code Smell Detection in Imbalanced and Uncertain Environments". Date: January 12nd, 2022.
- 2021 MEMBER OF THE ADVISORY COMMITTEE OF DR. SARA FILIPA COUTO FERNANDES (UNIVERSITY OF PORTO, PORTUGAL)

 External assessor and Ph.D. advisory committee member of the dissertation thesis developed by Dr. Sara Filipa
 Couto Fernandes, entitled: "A Live Environment for Continuous Software Inspection and Refactoring". Date: June 23rd, 2021.
- 2020 MEMBER OF THE PH.D. JURY OF DR. JONAS DE BLESER (VRIIE UNIVERSITEIT BRUSSEL, BELGIUM)

 External assessor and Ph.D. committee member of the dissertation thesis developed by Dr. Jonas De Bleser, entitled: "An Automated Delta-Debugging Approach to Resilience Testing of Actor Systems through Fault Injection". Date: October 2nd, 2020.

7.10 ACADEMIC SERVICES

2025 - NATIONAL COORDINATOR OF THE FOCUS GROUP ON "SOFTWARE" OF THE CINI WORKING GROUP ON SYSTEM AND SERVICE QUALITY current National Coordinator of the Focus Group on "Software" of the CINI Working Group, which aims to foster

collaboration among academia, industry, and public institutions to advance research, innovation, and technology transfer in the field of software engineering, with a particular focus on emerging challenges such as Al-driven development, cybersecurity, and sustainable software.

2023 - MEMBER OF THE PH.D. COMMITTEE OF THE XXXIX CYCLE OF THE PH.D. PROGRAM IN COMPUTER SCIENCE

current Member of the Ph.D. Committee of the XXXIX Cycle of the Ph.D. Program in Computer Science of the University of Salerno.

2023 - MEMBER OF THE PH.D. PROGRAM QUALITY ASSURANCE GROUP

current Member of the Quality Assurance Group with the responsibility of monitoring the research activities and career progresses of the Ph.D. Students enrolled to the Ph.D. Program in Computer Science of the University of Salerno.

2022 - LOCAL COORDINATOR OF THE CINI WORKING GROUP ON SYSTEM AND SERVICE QUALITY

current Local Coordinator of the CINI Working Group, which aims to foster discussion and collaboration among the Italian research groups working on methodologies and approaches for maintaining and evolving high-quality IT systems and services.

2021 - MEMBER OF THE STUDY PLAN COMMITTEE

Member of the Study Plan Committee with the responsibility of verifying and providing advice on the study plans submitted by Bachelor's and Master's students enrolled to the Computer Science Program of the University of Salerno.

8 CONFERENCES AND SCHOOLS PARTICIPATIONS

8.1 CONFERENCES

current

2024 46TH IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2024)

Lisbon, Portugal

2024 31ST IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ANALYSIS, EVOLUTION, AND REENGINEERING (SANER 2018)
Rovaniemi, Finland

2023 45TH IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2023)

Melbourne, Australia

2023 49TH EUROMICRO CONFERENCE SERIES ON SOFTWARE ENGINEERING AND ADVANCED APPLICATIONS (SEAA 2023)

Durres, Albania

2022 48TH EUROMICRO CONFERENCE SERIES ON SOFTWARE ENGINEERING AND ADVANCED APPLICATIONS (SEAA 2022)

Gran Canaria, Spain

2021 36TH IEEE INTERNATIONAL CONFERENCE ON SOFTWARE MAINTENANCE AND EVOLUTION (ICSME 2021)

Virtual

2021 43RD IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2021)

Virtual

2020 35TH IEEE International Conference on Software Maintenance and Evolution (ICSME 2020)

Virtual

2020 42ND IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2020)

Virtual

2019 41ST IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2019)

Montreal, Canada

2018 34TH IEEE INTERNATIONAL CONFERENCE ON SOFTWARE MAINTENANCE AND EVOLUTION (ICSME 2018)

Madrid, Spain

Presentation of [C36].

2018 40TH IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2018)

Gothenburg, Sweden Presentation of [J7], [J8].

2018 25TH IEEE INTERNATIONAL CONFERENCE ON SOFTWARE ANALYSIS, EVOLUTION, AND REENGINEERING (SANER 2018)

Campobasso, Italy

2017 33RD IEEE International Conference on Software Maintenance and Evolution (ICSME 2017)

Shanghai, China Presentation of [C23].

2017 39TH IEEE/ACM INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2017)

Buenos Aires, Argentina Presentation of [C16], [C18].

2017 25TH IEEE INTERNATIONAL CONFERENCE ON PROGRAM COMPREHENSION (ICPC 2017)

Buenos Aires, Argentina Presentation of [C21], [C22].

2016 49TH CREST OPEN WORKSHOP (COW) ON SOFTWARE ARCHITECTURE AND TECHNICAL DEBT

London, United Kingdom Presentation of [J1].

2016 32ND IEEE INTERNATIONAL CONFERENCE ON SOFTWARE MAINTENANCE AND EVOLUTION (ICSME 2016)

Raleigh, USA

Presentation of [C13], [C15].

2016 38TH IEEE/ACM INTERNATIONAL CONFERENCE ON SOFTWARE ENGINEERING (ICSE 2016)

Austin, USA

Presentation of [C9], [C10].

2015 1ST International Summer School on Software Engineering (ISSSE)

Free University of Bozen-Bolzano, Bolzano, Italy

Presentation of [C1].

2015 37th IEEE/ACM International Conference on Software Engineering (ICSE 2015)

Florence, Italy

Presentation of [C4], [C5] and [C6].

2014 30[™] IEEE International Conference on Software Maintenance and Evolution (ICSME 2014)

Victoria, British Columbia, Canada

Presentation of [C3].

2014 11TH INTERNATIONAL SUMMER SCHOOL ON SOFTWARE ENGINEERING (ISSSE)

University of Salerno, Fisciano, Italy Scientific Secretarial of the School

2013 28TH IEEE/ACM International Conference on Automated Software Engineering (ASE 2013)

Palo Alto, USA
Presentation of [C2].

9 Research Internships and Visiting

2024 VISITING PROFESSOR AT THE GRAN SASSO SCIENCE INSTITUTE, L'AQUILA, ITALY

7 days as Visitor Professor at the Gran Sasso Science Institute (GSSI). During the visiting period, I delivered an advanced Ph.D. course entitled "Software Engineering with and for Artificial Intelligence".

2021 VISITING PROFESSOR AT THE JHERONIMUS ACADEMY OF DATA SCIENCE, S'HERTOGENBOSCH, THE NETHERLAND

6 months as Visitor Professor at the Jheronimus Academy of Data & Engineering (JADE) Lab. The research conducted in this period resulted in the definition of novel methods and techniques for the application of machine learning and natural language processing to various software engineering domains, like code quality of infrastructure code as well as the analysis of functional and non-functional requirements of mobile applications.

2016 VISITING PHD STUDENT AT THE DELFT UNIVERSITY OF TECHNOLOGY, DELFT, THE NETHERLAND

3 months as Visitor Student. The research conducted in this time period resulted in the definition of TACO, a code smell detection approach exploiting textual-based information, and its empirical evaluation [C11, J8].

10 AWARDS AND RECOGNITION

2025 BEST PAPER AWARD FOR [C87]

1st International Workshop on Fairness in Software Systems (Fairness 2025), Montreal, Canada.

2024 DISTINGUISHED REVIEWER AWARD

40th ACM International Conference on Software Maintenance and Evolution, Flagstaff, Arizona, USA.

2024 DISTINGUISHED REVIEWER AWARD

1st ACM International Conference on Al-Powered Software (Alware), Porto de Galinhas, Brazil.

2023 DISTINGUISHED REVIEWER AWARD

IEEE Transactions on Software Engineering (TSE).

2023 BEST PAPER AWARD FOR [C75]

49th Euromicro Conference Series on Software Engineering and Advanced Applications (SEAA), Durres, Albania.

2023 IEEE COMPUTER SOCIETY TECHNICAL COUNCIL ON SOFTWARE ENGINEERING RISING STAR AWARD

Motivation: "In recognition of his research on code refactoring and code smells. The use of alternative sources of information, such as historical and textual information, besides the structural information previously used in the literature, has led to significant research advancements in the area". https://tc.computer.org/tcse/awards/.

2022 Best Paper Award for [C70]

48th Euromicro Conference Series on Software Engineering and Advanced Applications (SEAA), Gran Canaria, Spain.

2022 IEEE/TCSE DISTINGUISHED PAPER AWARD FOR [C64]

29th IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER), Honolulu, Hawaii, USA.

2021 DISTINGUISHED PROGRAM COMMITTEE MEMBER AWARD

36th IEEE/ACM International Conference on Automated Software Engineering (ASE).

2021 DISTINGUISHED REVIEWER AWARD

21st IEEE International Conference on Source Code Analysis and Manipulation (SCAM).

2020 Outstanding Reviewer Award

Elsevier's Information and Software Technology Journal (IST).

2020 OUTSTANDING REVIEWER AWARD

e-Informatica Software Engineering Journal (EISEJ).

2020 OUTSTANDING REVIEWER AWARD

Elsevier's Journal of Systems and Software (JSS).

2019 DISTINGUISHED REVIEWER AWARD

27th IEEE/ACM International Conference on Program Comprehension (ICPC).

2019 OUTSTANDING REVIEWER AWARD

Elsevier's Journal of Systems and Software (JSS).

2018 BEST PAPER HONOURABLE MENTION FOR [C40]

21th ACM International Conference on Computer Supported Cooperative Work (CSCW), New York, USA.

2018 DISTINGUISHED REVIEWER AWARD

Springer's Journal of Empirical Software Engineering (EMSE).

2018 OUTSTANDING REVIEWER AWARD

Elsevier's Journal of Systems and Software (JSS).

2018 OUTSTANDING REVIEWER AWARD

Elsevier's Information and Software Technology Journal (IST).

2018 BEST TOOL DEMO AWARD FOR [C29]

33rd IEEE International Conference on Software Maintenance and Evolution (ICSME), Shanghai, China.

2017 IEEE COMPUTER SOCIETY BEST PHD THESIS AWARD – ITALY SECTION CHAPTER

For my PhD Thesis named: "Code Smells: Relevance of the Problem and Novel Detection Techniques". https://site.ieee.org/italy-cs/ieee-computer-society-italy-section-chapter-2017-phd-thesis-award/

2017 DISTINGUISHED REVIEWER AWARD

Springer's Journal of Empirical Software Engineering (EMSE).

2017 IEEE/TCSE DISTINGUISHED PAPER AWARD FOR [C23]

33rd IEEE International Conference on Software Maintenance and Evolution (ICSME), Shanghai, China.

2016 OUTSTANDING REVIEWER AWARD

Elsevier's Information and Software Technology Journal (IST).

2015 ACM/SIGSOFT DISTINGUISHED PAPER AWARD FOR [C4]

37th ACM/IEEE International Conference of Software Engineering (ICSE), Firenze, Italy.

2015 Bronze Medal at the Student Research Competition for [C5]

37th ACM/IEEE International Conference of Software Engineering (ICSE), Firenze, Italy.

2013 ACM/SIGSOFT DISTINGUISHED PAPER AWARD FOR [C2]

28th ACM/IEEE International Conference on Automated Software Engineering (ASE), Palo Alto, USA.

11 Grants

2023 PRIN (PROGETTO DI RILEVANTE INTERESSE NAZIONALE) PROJECT – AMOUNT: 239.660 EUR

The grant has the awarded by the Ministry of University (MUR) and represents one of the most prestigious research grants for researchers in Italy. The project aims at devising novel methods and techniques for engineering fairness and ethics in the context of Artificial Intelligence-based software systems. The role played in this project is the one of *National Coordinator* of the project. The project is in collaboration with the University of L'Aquila (Prof.

Davide Di Ruscio) and the University of Sannio (Dr. Andrea Di Sorbo).

2023 PRIN (Progetto di Rilevante Interesse Nazionale) Project—Amount: 249.609 EUR

The grant has the awarded by the Ministry of University (MUR) and represents one of the most prestigious research grants for researchers in Italy. The project aims at devising novel methods and techniques for the quality and evolution of Artificial Intelligence-based software systems. The role played in this project is the one of *Local Scientific Coordinator* of the research unit of the University of Salerno. The project is in collaboration with the University of Bari (Prof. Nicole Novielli) and the University of Molise (Prof. Rocco Oliveto). Prof. Nicole Novielli from the University of Bari is the National Coordinator of the project.

2019 SNSF AMBIZIONE- AMOUNT: 894.430 CHF

The grant has the awarded by the Swiss National Science Foundation and represents one of the most prestigious individual research grants for young researchers in Europe. The project aims at devising novel instruments and techniques to improve automatic software testing.

2019 HASLER RESEARCH GRANT – AMOUNT: 50.000 CHF

The grant has the main goal to study the feasibility of new test code quality metrics based on a combination of factors deemed important by developers.

2018 FORSCHUNGSCREDIT POSTDOC GRANT – AMOUNT: 60.000 CHF

The grant has the main goal to study how test code quality can be exploited to improve test code effectiveness, with the aim of producing novel techniques and tools to help developers in designing effective test cases.

2017 4TU.NIRICT.2017 - AMOUNT: 70.000 €

The grant has the main goal to reinforce the collaboration among the four technical Universities in Netherlands. The proposal is related to the relationship between social and technical aspects of source code, and mainly concerned with the understanding of the impact of social debt on the introduction of code smells and fault.

12 LIST OF PAPERS

Note: This list is not a complete list of the papers I published in my career, but only the most significant ones. A complete list is available at: https://dblp.org/pid/116/6732.html.

12.1 INTERNATIONAL JOURNALS

[J80] P. Khokhar, C. Gravino, F. Palomba.

Advances in Artificial Intelligence for Diabetes Prediction: Insights from a Systematic Literature Review. Elsevier's Artificial Intelligence in Medicine (AIIM), to appear, 2025.

[J79] V. De Martino, G. Voria, C. Troiano, G. Catolino, **F. Palomba**.

Examining the Impact of Bias Mitigation Algorithms on the Sustainability of ML-enabled Systems: A Benchmark Study.

Elsevier's Journal of Systems and Software (JSS), to appear, 2025.

[J78] G. De Vito, **F. Palomba**, F. Ferrucci.

The Role of Large Language Models in Addressing IoT Challenges: A Systematic Literature Review. Future Generation Computer Systems (FGCS), to appear, 2025.

[J77] G. De Vito, S. Di Martino, F. Ferrucci, C. Gravino, F. Palomba.

LLM-Based Automation of Cosmic Functional Size Measurement From Use Cases.

 ${\tt IEEE\ Transactions\ on\ Software\ Engineering\ (TSE),\ to\ appear,\ 2025.}$

[J76] S. Lambiase, G. Catolino, **F. Palomba**, F. Ferrucci, D. Russo.

Investigating the role of cultural values in adopting large language models for software engineering.

- ACM Transactions on Software Engineering and Methodology (TOSEM), to appear, 2025.
- [J75] G. Voria, G. Sellitto, C. Ferrara, F. Abate, A. De Lucia, F. Ferrucci, G. Catolino, F. Palomba. Fairness-aware practices from developers' perspective: A survey. Elsevier's Information and Software Technology (IST), Vol. 182, 107710, 2025.
- [J74] V. Pontillo, L. Martins, I. Machado, F. Palomba, F. Ferrucci.
 An empirical investigation into the capabilities of anomaly detection approaches for test smell detection.
 Elsevier's Journal of Systems and Software (JSS), vol. 222, 112320, 2025.
- [J73] V. De Martino, F. Palomba.
 Classification and challenges of non-functional requirements in ML-enabled systems: A systematic literature review.
 Elsevier's Information and Software Technology (IST), Vol. 181, 107678, 2025.
- [J72] G. Annunziata, S. Lambiase, D. Tamburri, W. J. Van den Heuven, **F. Palomba**, G. Catolino, F. Ferrucci, A. De Lucia. Uncovering Community Smells in Machine Learning-Enabled Systems: Causes, Effects, and Mitigation Strategies. ACM Transactions on Software Engineering and Methodology, to appear.
- [J71] L. Martins, V. Pontillo, H. Costa, F. Ferrucci, F. Palomba, I. Machado. Test code refactoring unveiled: where and how does it affect test code quality and effectiveness? Springer's Journal of Empirical Software Engineering (EMSE), Vol. 30(1), 1-39, 2025.
- [J70] S. Lambiase, G. Catolino, F. Palomba, F. Ferrucci. Motivations, Challenges, Best Practices, and Benefits for Bots and Conversational Agents in Software Engineering: A Multivocal Literature Review. ACM Computing Surveys (CSUR), vol. 57, n. 4, pp. 1-37.
- [J69] A. Afeltra, A. Cannavale, F. Pecorelli, V. Pontillo, F. Palomba. A Large-Scale Empirical Investigation into Cross-Project Flaky Test Prediction. IEEE Access, vol. 12, pp. 131255-131265, 2024.
- [J68] M. De Stefano, F. Pecorelli, D. Di Nucci, F. Palomba, A. De Lucia. The Quantum Frontiers of Software Engineering: A Systematic Mapping Study. Elsevier's Information and Software Technology (IST), vol. 175, 107525.
- [J67] G. Recupito, F. Pecorelli, G. Catolino, V. Lenarduzzi, D. Taibi, D. Di Nucci, F. Palomba. Technical Debt in Al-Enabled Systems: On the Prevalence, Severity, Impact, and Management Strategies for Code and Architecture. Elsevier's Journal of Systems and Software (JSS), vol. 216, 112151, 2024.
- [J66] V. Pentangelo, D. Di Dario, S. Lambiase, F. Ferrucci, C. Gravino, F. Palomba. SENEM: A Software Engineering-Enabled Educational Metaverse. Elsevier's Information and Software Technology (IST), Vol. 174, 107512, 2024.
- [J65] S. Alawadi, K. Alkharabsheh, F. Alkhabbas, V. Kebande, F. Awaysheh, F. Palomba, M. Awad. FedCSD: A Federated Learning-Based Approach for Code Smell Detection. IEEE Access, vol. 12, pp. 44888 - 44904 2024.
- [J64] E. Iannone, G. Sellitto, E. Iaccarino, F. Ferrucci, A. De Lucia, F. Palomba.
 Early and Realistic Exploitability Prediction of Just-Disclosed Software Vulnerabilities: How Reliable Can It Be?
 ACM Transactions on Software Engineering and Methodology (TOSEM), vol. 33, issue 6, pp. 1-41, 2024.
- [J63] M. De Stefano, D. Di Nucci, F. Palomba, A. De Lucia. An Empirical Study Into the Effects of Transpilation on Quantum Circuit Smells. Springer's Journal of Empirical Software Engineering (EMSE), Vol. 29.3, 61, 2024.
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