+39 327 9946952
Via Roma 2, Fisciano
Salerno, Italy
grecupito@unisa.it
gilbertrec.github.io

Gilberto **Recupito**

1 Personal Information

Full Name
Gilberto Recupito

Date of Birth
January 25th, 1997

Place of Birth
Salerno, Italy

Current Address
Via Roma 2 - 84084, Fisciano, Salerno, Italy

---

2 Actual Position

Ph.D. Student – Computer Science — **Nov 2022 – current**
3rd Year — *Università degli studi di Salerno*

---

3 Work Experience

Guest Researcher — **May 2024 – July 2024**
Project collaboration with Prof. Michael Felderer at German Aerospace center (DLR) — *Cologne, Germany*

Research Assistant — **Apr 2022 – Sep 2022**
CloudSea.AI, research group with Prof. Davide Taibi at Tampere University — *Tampere, Finland*

4 Education

Master's Degree (MSc) in Computer Science **2022**
Magna cum laude, Advisor: Prof. Fabio Palomba Università degli studi di Salerno

Bachelor's Degree (BSc) in Computer Science **2019**
Advisor: Prof. Vittorio Scarano Università degli studi di Salerno

---

5 Research Areas

My main research area is Software Engineering for Artificial Intelligence (SE4AI), focusing the research effort on Software Quality and analysis of Technical Debt in AI systems.
My research activities focus on :

- **AI Technical Debt**: The definition of technical debt is highly analyzed in traditional systems (i.e., a set of sub-optimal design choices that can negatively affect the data and the system's quality). Recent studies started the exploration of technical debt present in machine learning and artificial intelligence systems, called AI Technical Debt (AITD). My research activities aim to define a fully defined taxonomy describing several instances that can cause quality issues. In a recent work, I have analyzed the (i) frequency, (ii) severity, and (iii) impact of the instances of AITD issues from the developer's perception.
- **MLOps**: DevOps has become increasingly widespread, with companies employing its methods in different fields to automate the process. In this context, MLOps automates Machine Learning pipelines by applying DevOps practices. My research activities focus on the discovery and definition of practices, features, and tools that can support ML practitioners during the execution of an ML pipeline. During my research experience, I have analyzed the features of MLOps tools to support practitioners in automating the stages composing an ML Pipeline [11].

---

6 Professional Activities

6.1 Organizing Activities

International Conference on AI Foundation Models and Software Engineering (FORGE) **2025**
Program Committee *Ottawa, Canada*

International Conference on Software Analysis, Evolution and Reengineering (SANER) **2025**
Session Chair *Montréal, Canada*

Workshop on Software Quality Assurance for Artificial Intelligence (SQA4AI) **2025**
Program Committee Member *Montréal, Canada*

International Conference on Automated Software Engineering (ASE) **2024**
Artifact Evaluation Track Program Committee *California, United States*

International Conference on AI Foundation Models and Software Engineering (FORGE) **2024**
Program Committee *Lisbon, Portugal*

International Working Conference on Mining Software Repositories (MSR) **2024**
Junior Program Committee *Lisbon, Portugal*

Seminar Series on Advanced Techniques & Tools for Software Evolution (SATToSE) **2023**
Social Media Chair *Salerno, Italy*

International Conference on Software Engineering Advances (ICSEA) **2023**
Program Committee Member *Valencia, Spain*

Annual Symposium for Computer Science **2022**
Organizing Committee Member *Tampere, Finland*

6.2 Research Activities

SoftwareX **2024**
Reviewer

Journal of Software: Evolution and Process **2024**
Reviewer

ACM Transactions on Software Engineering and Methodology **2023-2025**
Reviewer

Empirical Software Engineering **2024, 2025**
Reviewer

ACM Conference On Computer-Supported Cooperative Work And Social Computing **2023, 2024**
Reviewer

Journal of Systems and Software **2023, 2024**
Reviewer

Science of Computer Programming **2023**
Reviewer

Journal of Decision Systems **2022**
Reviewer

6.3 Teaching Activities

6.3.1 University of Salerno, Italy

Software Dependability (M.Sc.) **2023, 2024**
Support to course projects. Prof. Di Nucci

Software Engineering for Artificial Intelligence (M.Sc.) **2023,2024**
Support to course projects and guest lecture on Transfer Learning, Transformers and MLOps. Prof. Palomba

Software Engineering, Management and Evolution (M.Sc.) **2023,2024**
Support to course projects and guest lecture on DevOps. Prof. De Lucia

Software Engineering (B.Sc.) **2023,2024**
Support to course projects and guest lectures on Maven, GitHub, and testing frameworks. Prof. De Lucia

7 Conferences and School Participations

International Workshop of Software Quality Assurance for Artificial Intelligence (SQA4AI) **2024**
Presentation of [2] and [1] *Salerno, Italy*

International Conference on Evaluation and Assessment in Software Engineering (EASE) **2024**
Attended *Salerno, Italy*

3rd International Conference on AI Engineering (CAIN) **2024**
Presentation of [10] *Salerno, Italy*

Seminar Series on Advanced Techniques & Tools for Software Evolution (SATToSE) **2023**
Speaker *Salerno, Italy*

International School of Software Engineering (ISSSE) **2023**
Attended *Salerno, Italy*

48th Euromicro Conference on Software Engineering and Advanced Applications (SEAA) **2022**
Presentation of [11] *Gran Canaria, Spain*

8 Additional Contributions

PRIN Project: FRINGE **2023**
Actively contributed to the PRIN project FRINGE awarded by NextGeneration EU and the MUR (Ministero dell'Università e della Ricerca).

PRIN Project: QUALAI **2022**
Actively contributed to the PRIN project QUALAI awarded by the MUR (Ministero dell'Università e della Ricerca).

---

9 Publications

[1] A. Della Porta, G. Recupito, S. Lambiase, D. Di Nucci, and F. Palomba, "Unlocking code simplicity: The role of prompt patterns in managing llm code complexity," in *International Workshop of Software Quality Assurance for Artificial Intelligence (SQA4AI)*, 2025.

[2] G. Recupito, V. De Martino, D. Di Nucci, and F. Palomba, "A first look at the lifecycle of dl-specific self-admitted technical debt," in *International Workshop of Software Quality Assurance for Artificial Intelligence (SQA4AI)*, 2025.

[3] Z. Codabux, F. Fard, R. Verdecchia, F. Palomba, D. Di Nucci, and G. Recupito, "Teaching mining software repositories," in *Handbook on Teaching Empirical Software Engineering*. Springer, 2024.

[4] A. Della Porta, V. De Martino, G. Recupito, C. Iemmino, G. Catolino, D. Di Nucci, and F. Palomba, "Using large language models to support software engineering documentation in waterfall life cycles: Are we there yet?," 2024.

[5] D. La Gamba, G. Iuliano, G. Recupito, G. Giordano, F. Ferrucci, D. Di Nucci, and F. Palomba, "Toward a search-based approach to support the design of security tests for malicious network traffic," in *Proceedings of the 28th International Conference on Evaluation and Assessment in Software Engineering*, ser. EASE '24, , Salerno, Italy, Association for Computing Machinery, 2024, pp. 624–628, ISBN: 9798400717017. DOI: 10.1145/3661167.3661288.

[6] N. Novielli, R. Oliveto, F. Palomba, F. Calefato, G. Colavito, V. De Martino, A. Della Porta, G. Giordano, E. Guglielmi, F. Lanubile, *et al.*, "Continuous quality improvement of ai-based systems: The qualai project," in *Proceedings of the 18th ACM/IEEE International Symposium on Empirical Software Engineering and Measurement*, 2024, pp. 603–607.

[7] N. Novielli, R. Oliveto, F. Palomba, F. Calefato, G. Colavito, V. De Martino, A. Della Porta, G. Giordano, E. Guglielmi, F. Lanubile, *et al.*, "Qualai: Continuous quality improvement of ai-based systems.," in *RCIS Workshops*, 2024.

[8] G. Recupito, G. Giordano, F. Ferrucci, D. Di Nucci, and F. Palomba, "When code smells meet ml: On the lifecycle of ml-specific code smells in ml-enabled systems," in *International Working Conference on Mining Software Repositories - Registered Report Track*, 2024.

[9] G. Recupito, F. Pecorelli, G. Catolino, V. Lenarduzzi, D. Taibi, D. Di Nucci, and F. Palomba, "Technical debt in ai-enabled systems: On the prevalence, severity, impact, and management strategies for code and architecture," *Journal of Systems and Software*, p. 112 151, 2024, ISSN: 0164-1212. DOI: https://doi.org/10.1016/j.jss.2024.112151.

[10] G. Recupito, R. Rapacciuolo, D. Di Nucci, and F. Palomba, "Unmasking data secrets: An empirical investigation into data smells and their impact on data quality," *3rd International Conference on AI Engineering – Software Engineering for AI*, 2024.

[11] G. Recupito, F. Pecorelli, G. Catolino, S. Moreschini, D. Di Nucci, F. Palomba, and D. A. Tamburri, "A multivocal literature review of mlops tools and features," *Euromicro Conference on Software Engineering and Advanced Applications*, 2022. DOI: http://dx.doi.org/10.13140/RG.2.2.10257.71526.

In Fede: