
Antonio Mastropaolo

Curriculum Vitae

1 Personal Information

Name	Antonio Mastropaolo
Work Address	Università della Svizzera italiana Faculty of Informatics Via La Santa 1 6958 Lugano (CH)
E-Mail	antonio.mastropaolo@usi.ch
Web	https://antoniomastropaolo.com/
Research Interests	AI4SE (Artificial Intelligence for Software Engineering) Software Quality

2 Education and Employment History

October 2020 - Now	Ph.D. Student - Università della Svizzera Italiana, Switzerland
January 2020 - July 2020	Research Assistant - University of Molise, Italy
October 2018 - July 2020	MSc (with <i>summa cum laude</i>) in Security of Software Systems from the University of Molise Dissertation: <i>DeepGen: A Multi-task Learning Model for Software Engineering Related-Tasks</i>
October 2005 - July 2018	BSc in Computer Science (with <i>summa cum laude</i>) from the University of Molise Dissertation: <i>An Adaptive Allocation of Search Budget in Search Based Software Testing</i>

3 Bibliometric Indicators

Published articles	13, and in particular: 5 journal articles, including 2 TSE, 1 TOSEM, 1 EMSE and 1 JSS 8 international conferences, including 6 full research papers in top-tier venues, 5 ICSE and 1 ASE papers Complete list available at: https://antoniomastropaolo.com
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4 Publications

Refereed Journal Publications

6. A. Mastropaolo, V. Ferrari, L. Pascarella, G. Bavota. *Log Statements Generation via Deep Learning: Widening the Support Provided to Developers*. Journal of Systems and Software (JSS), To Appear (2023).
5. R. Tufano, O. Dabic, A. Mastropaolo, M. Ciniselli, G. Bavota. *Code Review Automation: Strengths and Weaknesses of the State of the Art*. Transactions on Software Engineering (TSE), (Currently under review after minors changes asked)
4. A. Mastropaolo, E. Aghajani, L. Pascarella, G. Bavota. *Automated variable renaming: are we there yet?*. Empirical Software Engineering (EMSE), Volume 28(2), pp. 45, (2023).
3. A. Mastropaolo, N. Cooper, D.N. Palacio, S. Scalabrino, D. Poshyvanyk, R. Oliveto, G. Bavota. *Using Transfer Learning for Code-Related Tasks*. Transactions on Software Engineering (TSE), IEEE, Volume 49(4), pp. 1580-1598 (2023).
2. M. Ciniselli, N. Cooper, L. Pascarella, A. Mastropaolo, E. Aghajani, D. Poshyvanyk, M. Di Penta, G. Bavota. *An Empirical Study on the Usage of Transformer Models for Code Completion*. Transactions on Software Engineering (TSE), IEEE, Volume 48(12), pp. 4818-4837 (2022).
1. S. Scalabrino, A. Mastropaolo, G. Bavota, Rocco Oliveto. *An Adaptive Search Budget Allocation Approach for Search-Based Test Case Generation*. Transactions on Software Engineering and Methodology (TOSEM), ACM, Volume 30(3), pp. 1-26 (2021).

Peer-reviewed Conference Publications

9. A. Mastropaolo, M. Ciniselli, G. Bavota, M. Di Penta. *Evaluating Code Summarization Techniques: A New Metric and an Empirical Characterization*. 46th IEEE/ACM International Conference on Software Engineering (ICSE 2024), Lisbon, Portugal, 2024, (Currently under review after majors changes asked).
8. A. Mastropaolo, M. Ciniselli, M. Di Penta, G. Bavota. *Toward Automatically Completing GitHub Workflows*. In: Proceedings of 46th IEEE/ACM International Conference on Software Engineering (ICSE 2024), Lisbon, Portugal, 2024, pp. 117-128.
7. A. Mastropaolo, M. Di Penta, G. Bavota. *Towards Automatically Addressing Self-Admitted Technical Debt: How Far Are We?*. In: Proceedings of 38th IEEE/ACM International Conference on Automated Software Engineering (ASE 2023), Luxembourg, 2023, To Appear - 12 pages
6. G. Rosa, A. Mastropaolo, S. Scalabrino, G. Bavota, R. Oliveto. *Automatically Generating Dockerfiles via Deep Learning: Challenges and Promises*. In: Proceedings of 43rd IEEE/ACM International Conference on Software and System Processes (ICSSP 2023), Melbourne, Australia, 2023, pp. 1-12
5. A. Mastropaolo, L. Pascarella, G. Guglielmi, M. Ciniselli, S. Scalabrino, R. Oliveto, G. Bavota. *On the Robustness of Code Generation Techniques: An Empirical Study on GitHub Copilot*. In: Proceedings of 45th IEEE/ACM International Conference on Software Engineering (ICSE 2023), Melbourne, Australia, 2023, pp. 2149-2160
4. R. Tufano, S. Masiero, A. Mastropaolo, L. Pascarella, D. Poshyvanyk, G. Bavota. *Using Pre-Trained Models to Boost Code Review Automation*. In: Proceedings of 44th IEEE/ACM International Conference on Software Engineering (ICSE 2022), Pittsburgh, PA, USA, 2022, pp. 2291-2302
3. A. Mastropaolo, L. Pascarella, G. Bavota. *Using Deep Learning to Generate Complete Log Statements*. In: Proceedings of 44th IEEE/ACM International Conference on Software Engineering (ICSE 2022), Pittsburgh, PA, USA, 2022, pp. 2279-2290
2. A. Mastropaolo, E. Aghajani, L. Pascarella, G. Bavota. *An Empirical Study on Code Comment Completion*. In: Proceedings of 37th IEEE International Conference on Software Maintenance and Evolution (ICSME 2021), Luxembourg, 2021, pp. 159-170
1. A. Mastropaolo, S. Scalabrino, N. Cooper, D.N. Palacio, D. Poshyvanyk, R. Oliveto, G. Bavota. *Studying the Usage of Text-To-Text Transfer Transformer to Support Code-Related Tasks*. In: Proceedings of 43rd IEEE/ACM International Conference on Software Engineering (ICSE 2021), Madrid, Spain, 2021, pp. 336-347

5 Conference Presentations & Invited Talks

8. **ASE 2023 – Research Track**
Towards Automatically Addressing Self-Admitted Technical Debt: How Far Are We?, *September 2023, Luxembourg*.
7. **ICSE 2023 – Research Track**
On the robustness of code generation techniques: An empirical study on github copilot, *May 2023, Melbourne, Australia*.
6. **University of Molise – Invited Talk**
Deep-Learning for Software Engineering: Where are we heading to?, *February 2023, Pesche, Italy*.
5. **Microsoft VS Data Science Meeting – Invited Talk**
On Automating Code-Related Tasks via Pre-trained Models of Code, *December 2022, Virtual*.
4. **ICSME 2022 – Doctoral Symposium Track**
Widening the Support of Code-Related Tasks via Large Pre-trained Language Models of Code, *October 2022, Limassol, Cyprus*.
3. **ICSE 2022 – Research Track**
Using deep learning to generate complete log statements, *May 2022, Pittsburgh, United States of America (USA)*.
2. **ICSME 2021 – Research Track**
An empirical study on code comment completion, *September 2021, Virtual*.
1. **ICSE 2021 – Research Track**
Studying the usage of text-to-text transfer transformer to support code-related tasks, *May 2021, Virtual*.

6 Professional Activities and Service

6.1 Organizing Committee

2. **FORGE 2024** (Social Media and Publicity Co-Chair): 1st ACM/IEEE AI Foundation Models and Software Engineering, April 2024 - Lisbon, Portugal.
1. **ICSME 2023** (Proceedings Co-Chair): 39th IEEE International Conference on Software Maintenance and Evolution, October 2023 - Bogota, Colombia.

6.2 Program Committees

5. **ASE 2024** (Research Track): 39th IEEE/ACM International Conference on Automated Software Engineering, October 2024 - Sacramento, USA.
4. **NLBSE 2024** 3rd International Workshop on NL-based Software Engineering, April 2024 - Lisbon, Portugal.
3. **SANER 2024** (Short Papers and Posters Track): IEEE International Conference on Software Analysis, Evolution, and Reengineering, March 2024 - Rovaniemi, Finland.
2. **MSR 2023** (Junior PC): 20th IEEE/ACM International Working Conference on Mining Software Repositories, May 2023 - Melbourne, Australia.
1. **MSR 2022** (Shadow PC): 19th IEEE/ACM International Working Conference on Mining Software Repositories, May 2022 - Pittsburgh, USA.

6.3 Journal Reviewer

7. Transactions on Software Engineering (TSE): 2023.
6. Automated Software Engineering (ASE): 2023.
5. Transactions on Software Engineering and Methodology (TOSEM): 2022, 2023.
4. Journal of Empirical Software Engineering (EMSE): 2023.
3. Journal of Systems and Software (JSS), 2022, 2023.
2. Journal of Software: Evolution and Process (JSEP), 2023.
1. Journal of Computer Science and Technology (JCST), 2022.

7 Teaching Experience

Fall 2022, 2023	Lab Instructor and Teaching Assistant for the graduate course <i>Software Analytics</i> Università della Svizzera Italiana, Switzerland Language: English
Fall 2021, 2022	Lab Instructor and Teaching Assistant for the undergraduate course <i>Software Atelier 1</i> Università della Svizzera Italiana, Switzerland Language: English
Spring 2022	Lab Instructor and Teaching Assistant for the undergraduate course <i>Experimentation and Evaluations</i> Università della Svizzera Italiana, Switzerland Language: English
Spring 2021	Lab Instructor and Teaching Assistant for the undergraduate course <i>Programming Fundamentals 2</i> Università della Svizzera Italiana, Switzerland Language: English

8 Mentoring

5. **Andrea Michele Zucchi** - Università della Svizzera italiana, Bachelor student (2023)
JLOG: Supporting the Automatic Injection of Log Statements in Visual Studio Code.
Michele's thesis has resulted in a Visual Studio Code plugin publicly available at:
<https://marketplace.visualstudio.com/items?itemName=AndreaMicheleZucchi.loginjector>.
4. **Mak Fazlic** - Università della Svizzera italiana, Bachelor student (2023)
Application of Curriculum Learning in Deep Learning while finetuning transformer models (codeBERT).
3. **Valentina Ferrari** - Università della Svizzera italiana, Master student (2022)
Extending and Improving Log Statements Generation Using Pre-trained Models.
Valentina's thesis has been published at JSS (2023).
2. **Simone Masiero** - Università della Svizzera italiana, Master student (2021)
Using Pre-trained Models to Automate Code Review Activities.
Simone's thesis has been published at ICSE 2022.
1. **Matteo Omnetti** - Università della Svizzera italiana, Bachelor student (2021)
A Visual Studio Code Plugin for Experimenting Code Completion Models.
Matteo's thesis has resulted in a Visual Studio Code plugin publicly available at:
<https://marketplace.visualstudio.com/items?itemName=Matteo-Omenetti.simon>.

9 Volunteering

2. **ICSME 2023** (Student Volunteer): 39th IEEE International Conference on Software Maintenance and Evolution, October 2023 - Bogota, Colombia.
1. **ICSE 2023** (Student Volunteer): 45th IEEE International Conference on Software Engineering, May 2023 - Melbourne, Australia.