

Sebastiano Panichella - Top 10 Selected publications

TOP 10 SELECTED :
PUBLICATIONS
THAT INFLUENCED
(OR ARE
INFLUENCING) THE
RESEARCH FIELD

1. S. Panichella, A. Di Sorbo, E. Guzman, A. Visaggio, G. Canfora, H. Gall: How Can I Improve My App? Classifying User Reviews for Software Maintenance and Evolution. International Conference on Software Maintenance and Evolution. 2015
2. A. Di Sorbo, F. Zampetti, A. Visaggio, M. Di Penta, S. Panichella: Automated Identification and Qualitative Characterization of Safety Concerns Reported in UAV Software Platforms. Transactions on Software Engineering and Methodology. 2022
3. F. Zampetti, R. Kapur, M. Di Penta, S. Panichella: An Empirical Characterization of Software Bugs in Open-Source Cyber-Physical Systems. Journal of Systems & Software. 2022
4. C. Birchler, S. Khatiri, B. Bosshard, A. Gambi, S. Panichella: Machine Learning-based Test Selection for Simulation-based Testing of Self-driving Cars Software. Empirical Software Engineering. 2023
5. S. Khatiri, S. Panichella, P. Tonella: Simulation-based Test Case Generation for Unmanned Aerial Vehicles in the Neighborhood of Real Flights. International Conference on Software Testing, Verification and Validation. 2023
6. C. Birchler, T. Kombarabettu Mohammed, P. Rani, T. Nechita, T. Kehrer, S. Panichella: How does Simulation-based Testing for Self-driving Cars match Human Perception? ACM International Conference on the Foundations of Software Engineering. 2024
7. C. Birchler, S. Khatiri, P. Rani, T. Kehrer, S. Panichella: A Roadmap for Simulation-Based Testing of Autonomous Cyber-Physical Systems: Challenges and Future Direction. Special issue "A 2030 Roadmap for Software Engineering" in Transactions on Software Engineering and Methodology. 2025
8. S. Khatiri, F. Mohammadi Amin, S. Panichella, P. Tonella: When Uncertainty Leads to Unsafety: Empirical Insights into the Role of Uncertainty in Unmanned Aerial Vehicle Safety. Empirical Software Engineering Journal (EMSE). 2025
9. S. Khatiri, F. Barrientos, M. Wulf, P. Tonella, S. Panichella: Bridging Research and Practice in Simulation-based Testing of Industrial Robot Navigation Systems. International Conference on Automated Software Engineering. 2025
10. **Selected Contributions to Books:**
 - S. Panichella (Editor): *Roadmap for DevOps in Cyber-physical Systems: Challenges and Future Directions*. 2025
 - S. Panichella contributions to the book: *Large Language Models in Cybersecurity and Cyberdefense: Novel Threats and Mitigations Perspectives*. Chapters: "Vulnerabilities Introduced by LLMs through Code Suggestions", "Enhancing Security Awareness and Education for Large Language Models". 2024

Sebastiano Panichella – Complete List of Publications

REFEREED
JOURNAL
PUBLICATIONS

In papers marked with (*) the authors are listed in alphabetic order.

Journal Publications after the P.h.D.¹

- [1] Sajad Khatiri, Fatemeh Mohammadi Amin, Sebastiano Panichella, Paolo Tonella: **When Uncertainty Leads to Unsafety: Empirical Insights into the Role of Uncertainty in Unmanned Aerial Vehicle Safety**. Empirical Software Engineering journal (EMSE 2025).
<https://link.springer.com/article/10.1007/s10664-025-10697-z>
- [2] Christian Birchler, Sajad Khatiri, Pooja Rani, Timo Kehler, Sebastiano Panichella: **A Roadmap for Simulation-Based Testing of Autonomous Cyber-Physical Systems: Challenges and Future Direction**. Special issue "A 2030 Roadmap for Software Engineering" in ACM Transactions on Software Engineering and Methodology (TOSEM 2025).
<https://doi.org/10.1145/3711906>
- [3] Sajad Khatiri, Andrea Di Sorbo, Fiorella Zampetti, Corrado A. Visaggio, Massimiliano Di Penta, Sebastiano Panichella: **Identifying Safety-Critical Concerns in Unmanned Aerial Vehicle Software Platforms with SALIENT**. SoftwareX Journal, 2024.
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- [4] Pooja Rani, Arianna Blasi, Nataliia Stulova, Sebastiano Panichella, Alessandra Gorla, Oscar Nierstrasz: **A Decade of Code Comment Quality Assessment: A Systematic Literature Review**. Journal of Systems & Software (JSS 2022).
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- [5] Xavier Devroey, Alessio Gambi, Juan Pablo Galeotti, Rene Just, Fitsum Kifetew, Annibale Panichella, and Sebastiano Panichella: **JUGE: An Infrastructure for Benchmarking Java Unit Test Generators**. Software Testing, Verification and Reliability, 2023.
<https://onlinelibrary.wiley.com/doi/abs/10.1002/stvr.1838>
- [6] Christian Birchler, Sajad Khatiri, Bill Bosshard, Alessio Gambi, Sebastiano Panichella: Machine Learning-based Test Selection for Simulation-based Testing of Self-driving Cars Software. Empirical Software Engineering, 2023.
<https://doi.org/10.1007/s10664-023-10286-y>
- [7] Christian Birchler, Nicolas Ganz, Sajad Khatiri, Alessio Gambi, Sebastiano Panichella: Cost-effective Simulation-based Test Selection in Self-driving Cars Software. Science of Computer Programming, 2022.
<https://www.sciencedirect.com/science/article/pii/S0167642323000084?via%3Dihub>
- [8] Andrea Di Sorbo, Fiorella Zampetti, Corrado A. Visaggio, Massimiliano Di Penta, Sebastiano Panichella: Automated Identification and Qualitative Characterization of Safety Concerns Reported in UAV Software Platforms. Transactions on Software Engineering and Methodology (TOSEM 2022).
<https://dl.acm.org/doi/10.1145/3564821>
- [9] Zampetti, Fiorella; Tamburri, Damian ; Sebastiano Panichella; Panichella, Annibale; Canfora, Gerardo; Di Penta, Massimiliano: Continuous Integration and

¹Updated list available at <https://spanichella.github.io/publications.html>

- Delivery practices for Cyber-Physical systems: An interview-based study. *Transactions on Software Engineering and Methodology (TOSEM 2022)*.
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- [10] Annibale Panichella, Sebastiano Panichella, Gordon Fraser, Anand Sawant, and Vincent Hellendoorn: Test Smells 20 Years Later: Detectability, Validity, and Reliability. *Empirical Software Engineering (EMSE 2022) Journal*.
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 - [11] Fiorella Zampetti, Ritu Kapur, Massimiliano Di Penta, Sebastiano Panichella, An Empirical Characterization of Software Bugs in Open-Source Cyber-Physical Systems. *Journal of Systems and Software (JSS 2022)*.
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 - [12] Christian Birchler, Sajad Khatiri, Pouria Derakhshanfar, Sebastiano Panichella, and Annibale Panichella: Single and Multi-objective Test Cases Prioritization for Self-driving Cars in Virtual Environments. *ACM Transactions on Software Engineering and Methodology (TOSEM 2022)* doi:<https://dl.acm.org/doi/10.1145/3533818>
 - [13] Fiorella Zampetti, Saghan Mudbhari, Venera Arnaoudova, Massimiliano Di Penta, Sebastiano Panichella, Giuliano Antoniol: Using Code Reviews to Automatically Configure Static Analysis Tools. *Empirical Software Engineering*, 2022.
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- [21] Sebastiano Panichella and Nik Zaugg: An Empirical Investigation of Relevant Changes and Automation Needs in Modern Code Review. Empirical Software Engineering (EMSE) Journal. 2020
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- [31] G. Bavota, G. Canfora, M. Di Penta, R. Oliveto, S. Panichella. ***How the Apache Community Upgrades Dependencies**. *Empirical Software Engineering (EMSE)* 2014.
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- [32] A. De Lucia, M. Di Penta, R. Oliveto, A. Panichella, S. Panichella. ***Applying a Smoothing Filter to Improve IR-based Traceability Recovery Processes: An Empirical Investigation**. *Information and Software Technology (INFOSOF)* 2012.
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- [33] A. De Lucia, M. Di Penta, R. Oliveto, A. Panichella, S. Panichella. ***Labeling Source Code with Information Retrieval Methods: An Empirical Study**. *Empirical Software Engineering (EMSE)* 2013. doi:doi:10.1007/s10664-013-9285-5

Journal Publications during the master study³:

- [34] G. Capobianco, A. De Lucia, R. Oliveto, A. Panichella, S. Panichella. ***Improving IR-based traceability recovery via noun-based indexing of software artifacts**. *Journal of Software: Evolution and Process (JSE)* 2012.
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Conference/Workshop Publications after the Ph.D.⁴:

- [35] S. Khatiri, F.Barrientos, M. Wulf, P. Tonella, Sebastiano Panichella: **Bridging Research and Practice in Simulation-based Testing of Industrial Robot Navigation Systems**. International Conference on Automated Software Engineering (ASE 2025)
- [36] Pablo Valenzuela-Toledo, Chuyue Wu, Sandro Hernández, Alexander Boll, Roman Machacek, Sebastiano Panichella, Timo Kehler: **Explaining GitHub Actions Failures with Large Language Models: Challenges, Insights, and Limitations**. International Conference on Program Comprehension (ICPC 2025).
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- [37] Sajad Khatiri, Tahereh Zohdinasab, Prasun Saurabh, Dmytro Humeniuk, Sebastiano Panichella: **ICST Tool Competition 2025 – UAV Testing Track**. International Conference on Software Testing, Verification and Validation (ICST) 2025.
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- [38] Christian Birchler, Stefan Klikovits, Mattia Fazzini, Sebastiano Panichella: **ICST Tool Competition 2025-Self-Driving Car Testing Track**. International Conference on Software Testing, Verification and Validation (ICST) 2025.
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- [39] Sajad Khatiri, Tahereh Zohdinasab, Prasun Saurabh, Dmytro Humeniuk, Sebastiano Panichella: **SBFT Tool Competition 2025 - UAV Testing Track**. Intl. Workshop on Search-Based and Fuzz Testing (SBFT) 2025

- [40] Christian Birchler, Stefan Klikovits, Mattia Fazzini, Sebastiano Panichella: SBFT Tool Competition 2025 - CPS-SDC Regression Testing Track Intl. Workshop on Search-Based and Fuzz Testing (SBFT) 2025
- [41] Christian Birchler, Tanzil Kombarabettu Mohammed, Pooja Rani, Teodora Nechita, Timo Kehrer, Sebastiano Panichella: **How does Simulation-based Testing for Self-driving Cars match Human Perception?**. ACM International Conference on the Foundations of Software Engineering (FSE 2024).
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- [55] Usman Ashraf, Christoph Mayr-Dorn, Atif Mashkoor, Alexander Egyed, and Sebastiano Panichella: **Do Communities in Developer Interaction Networks align with Sub-system Developer Teams? An Empirical Study of Open Source Systems** *International Conference on Software and System Processes (ICSSP 2021)* - 10.1109/ICSSP-ICGSE52873.2021.00016.
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CONTRIBUTION TO
EDUCATION
(CHAPTERS AND
BOOKS):

1. Sebastiano Panichella is editor of the book: "Roadmap for DevOps in Cyber-physical Systems: Challenges and Future Directions", 2025.
2. Sebastiano Panichella contribution to the book: "Large Language Models in Cybersecurity and Cyberdefense: Novel Threats and Mitigations Perspectives", with the chapters "Vulnerabilities Introduced by LLMs through Code Suggestions" and "Enhancing Security Awareness and Education for Large Language Models". (2024)
3. Harald C. Gall, Carol V. Alexandru, Adelina Ciurumelea, Giovanni Grano, Christoph Laaber, Sebastiano Panichella, Sebastian Proksch, Gerald Schermann, Carmine Vassallo, Jitong Zhao: **Data-Driven Decisions and Actions in Today's Software Development**. *The Essence of Software Engineering*: 137-168. (2018)