Roberto **Verdecchia**

RESEARCH ASSOCIATE IN SOFTWARE ENGINEERING

✉ r.verdecchia@vu.nl | 🏠 robertoverdecchia.github.io | 🐙 robertoverdecchia

Summary

Research Associate of Software Engineering at the Vrije Universiteit Amsterdam (VU).
Member of the Netherlands Research School for Information and Kwnoledge Systems (SIKS).
Fascinated by empirical software engineering, especially when applied in the fields of software architecture, technical debt, software testing, and software energy efficiency.

Work Experience

Vrije Universiteit Amsterdam   *Amsterdam, The Netherlands*
RESEARCH ASSOCIATE   *2020 - Present*

- Research Associate in Software Engineering, focusing on Software Architecture and Technical Debt
- Responsibilities: Carry out personal research agenda, and support group-level research agenda. Conduct and supervise research projects.

Vrije Universiteit Amsterdam   *Amsterdam, The Netherlands*
TEACHING ASSISTANT   *2015 - Present*

- Courses: Software Testing, Software Architecture, Service Oriented Design, Software Modeling, Service Science
- Responsibilities: Supervise B.Sc/M.Sc Theses, and research projects. Conduct lectures, seminars and exercise sessions. Tutor teams of students. Review exams and deliverables. Manage e-learning platforms. Attend weekly meetings with instructors to align course content.

KPMG   *Amsterdam, The Netherlands*
GRADUATE RESEARCH INTERN   *Apr. 2016 - Oct. 2016*

- Graduate research intern focusing on the analysis of software products
- Responsibilities: Architecture reconstruction. Static and dynamic analysis of code bases. Server management. Performance testing. Automation scripting. Statistical data analysis

OMALA   *Amsterdam, The Netherlands*
SOFTWARE ENGINEERING INTERN   *Jun. 2015 - Aug. 2015*

- Software engineering intern focusing on the analysis of a large scale heterogeneous system of systems
- Responsibilities: Requirements engineering and architecture trade-off analysis for the Airport Garden City IT infrastructure project of the Lelystad Airport business park

Education

                                                                           L'Aquila, Italy Amsterdam, The
Gran Sasso Science Institute(GSSI) & Vrije Universiteit Amsterdam (VU)   *Netherlands*
DOUBLE PH.D. CANDIDATE IN SOFTWARE ENGINEERING   *Nov. 2016 - Present*

- Dissertation title: "Identification and Management of Architectural Technical Debt"

Vrije Universiteit Amsterdam (VU)   *Amsterdam, The Netherlands*
M.SC. IN COMPUTER SCIENCE: SOFTWARE ENGINEERING CURRICULUM   *2014 - 2016*

- Thesis title: "Static and Dynamic Analysis of Software Energy Efficiency in Industry" (*Cum Laude* distinction)

University of Florence - School of Engineering (UniFi)   *Florence, Italy*
B.ENG. IN COMPUTER ENGINEERING   *2011 - 2014*

- Thesis title: "Algorithm for Weather-based Naval Routing as an N-stage Decisional Process"

Selected Honors & Awards

2019	**Facebook Testing and Verification Award**, Facebook Testing and Verification Symposium 2019	*Montreal, Canada*
2019	**ACM-SIGSOFT Distinguished Paper Award**, IEEE-ACM International Conference on Software Engineering (ICSE) Paper: *Scalable Approaches for Test Suite Reduction*	*Montreal, Canada*
2018	**Best Early Career Researcher Award**, IEEE International Conference on Software Architecture (ICSA)	*Seattle, U.S.A*
2019	**Best Paper Award**, Hawaii International Conference on System Sciences (HICSS) Paper: *DecidArch: Playing Cards as Software Architects*	*Hawaii, U.S.A*

Selected Visitings

Electrical and Computer Engineering Department (University of British Columbia) *Vancouver, Canada*
VISITING RESEARCH SCHOLAR *April 2019 - June 2019*
- Topic: Architectural technical debt
- Host: Philippe Kruchten

SEDC Lab, ISTI-CNR (Italian National Research Council) *Pisa, Italy*
VISITING RESEARCH SCHOLAR *July 2019*
- Topic: Fast static approaches for test flakiness prediction
- Host: Antonia Bertolino

Services

Program Committee member	TechDebt (2021), ICSE (2021), ICSOFT (2021), TechDebt (2020), SOFTENG (2020), GREEN (2019)
Journal Reviewer	JSS (2019-), EMSE (2020-), IST (2020-), SUSCOM (2019-)
Ogranizing Commitee	BoKSS (2021, *Virtualization Chair*)
External Conference Reviewer	ICSE (2018, 2019), ICSA (2018, 2019), ECSA (2018, 2019), MOBILESoft (2018, 2019), ESEC/FSE (2018), ICT4S (2018, 2019)
Student Volunteer	ICSE (2018, 2019), ICPE (2018)

Selected Publications

- R. Verdecchia, P. Kruchten, P. Lago, I. Malavolta. *Building and evaluating a theory of architectural technical debt in software-intensive systems*. Journal of Software and Systems (**JSS**), 2021.
- R. Verdecchia, P.Lago, I. Malavolta, P. Lago, I.Ozkaya. *ATDx: Building an Architectural Technical Debt Index*. International Conference on Evaluation of Novel Approaches to Software Engineering (**ENASE**), 2020.
- R. Verdecchia, P.Kruchten, P. Lago. *Architectural Technical Debt: A Grounded Theory*. European Conference on Software Architecture (**ECSA**), 2020.
- R. Verdecchia, I. Malavolta, and P. Lago. *Guidelines for Architecting Android Apps: A mixed-method Empirical Study*. International Conference on Software Architecture (**ICSA**), 2019.
- E. Cruciani, B. Miranda, R. Verdecchia, A. Bertolino. *Scalable Approaches for Test Suite Reduction*. International Conference on Software Engineering (**ICSE**), 2019. 🏆 ACM SIGSOFT Distinguished Paper Award.
- P. Lago, Jia F. Cai, Remco C. de Boer, Philippe Kruchten, and R. Verdecchia. *DecidArch: Playing Cards as Software Architects*. Hawaii International Conference on System Sciences (**HICSS**), 2019. 🏆 Best Paper Award. 🏆 ISSIP-IBM-CBA Student Paper Award for Best Industry Studies Paper.
- I. Malavolta, R. Verdecchia, M. Bruntink , B. Filipovic and P. Lago. *On the Evolution of Maintainability Issues of Android Applications* IEEE International Conference on Software Maintenance and Evolution (**ICSME**), 2018.
- R. Verdecchia, R. A. Saez, Giuseppe Procaccianti, and P. Lago. *Empirical Evaluation of the Energy Impact of Refactoring Code Smells*. International Conference on ICT for Sustainability (**ICT4S**), 2018. 🏆 Runner-up Best Paper Award.
- B. Miranda, E. Cruciani, R. Verdecchia, A. Bertolino. *FAST Approaches to Scalable Similarity-based Test Case Prioritization*. International Conference on Software Engineering (**ICSE**), 2018.
- R. Verdecchia. *Identifying Architectural Technical Debt in Android Applications through Compliance Checking*. International Conference on Mobile Software Engineering and Systems (MobileSoft), 2018. 🏆 Bronze medal - ACM Student Research Competition.
- R. Verdecchia, Giuseppe Procaccianti, I. Malavolta, P. Lago, and J. Koedijk. *Estimating Energy Impact of Software Releases and Deployment Strategies: The KPMG Case Study*. Empirical Software Engineering and Measurement (**ESEM**), 2017.

Skills

Programming	Python, R, Bash, C++, Java, GO, Scala	**Typesetting**	LaTeX
Databases	MySQL, MongoDB, Cassandra	**Version Control**	Git, SVN
Frameworks/tools	Selenium, JMeter, Android, Kafka, Spark, Docker, GCP, Jenkins	**Languages**	Italian (native), German (native), English, Dutch, Spanish