

Dr. Andrea Rosà

Curriculum Vitae

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Contact Information

E-mail andrea.rosa@usi.ch
Phone +41 58 666 4455 ext. 2183
Address via la Santa 1, East Campus, Sector D, Office D5.10
Università della Svizzera italiana (USI), CH-6962 Lugano-Viganello, Switzerland

Homepage <https://rosa-andrea.github.io>
DBLP <https://dblp.org/pers/hd/r/Ros=agrave=:Andrea>
Google Scholar <https://scholar.google.com/citations?user=43pAkMkAAAAJ>
ResearchGate https://www.researchgate.net/profile/Andrea_Rosa3
GitHub <https://github.com/Fithos>
LinkedIn <https://www.linkedin.com/in/rosa-andrea>

Professional Experience

09.2018–present **Postdoctoral Researcher and Lecturer**, *Università della Svizzera italiana*, Lugano, Switzerland.
10.2013–08.2018 **Research and Teaching Assistant**, *Università della Svizzera italiana*, Lugano, Switzerland.

Education

04.2021 **Habilitation for Associate Professorship in Informatics (ASN)**, Italy.
10.2013–08.2018 **PhD**, *Informatics, Università della Svizzera italiana*, Lugano, Switzerland.
Doctoral dissertation: "Analysis and Optimization of Task Granularity on the Java Virtual Machine". Advisor: Prof. Walter Binder
09.2011–10.2013 **MSc**, *Computer Science Engineering, Politecnico di Milano*, Milan, Italy.
Advisor: Prof. Giuseppe Serazzi
09.2008–09.2011 **BSc**, *Computer Science Engineering, Politecnico di Milano*, Milan, Italy.
Advisor: Prof. Carlo Ghezzi

Skills

Experience Java Virtual Machine, Task Granularity, Task Profiling, Stream Profiling, Actor Profiling, Vertical Profiling, Operating System (OS) Profiling, Hardware-level Profiling, High-accuracy Profiling, Concurrent and Parallel Programming, Static and Dynamic Program Analysis, Bytecode Instrumentation, Intermediate-representation (IR) Instrumentation, Just-in-time (JIT) Compilation, Software Testing, Reflection, Benchmarking, Variability Analysis, Vectorization, Actor Frameworks, Runtime Monitoring and Verification, Empirical Evaluation, Large-scale Analysis and Evaluation, Studies on the Wild, Software Repository Crawling and Mining, Performance Evaluation and Optimization of Systems, Parallel and Distributed Frameworks, Distributed Programming, Hadoop and MapReduce Frameworks, Big-Data Analytics, Statistical Analysis, Data Analysis, Data Mining, Machine Learning Techniques, Simulation, Dependability.

Programming Languages, Frameworks and APIs Java, C/C++, Scala, Python, Node.js, DiSL, Graal, HotSpot VM, JVMTI, JNI, PAPI, Bash, Java Vector API, Akka, Apache Spark, Hadoop MapReduce, Apache Flink, Pascal, JavaScript, SQL, OpenMP, CUDA, Signal/Collect, R.

Tools MATLAB, LaTeX, PGF/TikZ, Gnuplot.

Publications

All listed papers and articles are peer-reviewed (original publications).

Journals and Newsletters

- [J1] [Andrea Rosà](#), Eduardo Rosales, Walter Binder. *Analysis and Optimization of Task Granularity on the Java Virtual Machine*. In **ACM Transactions on Programming Languages and Systems (TOPLAS)** 41(3): 19:1-19:47, July 2019.
- [J2] [Andrea Rosà](#), Walter Binder. *Optimizing Type-specific Instrumentation on the JVM with Reflective Supertype Information*. In **Journal of Visual Languages & Computing** 49:29-45, Dec. 2018.
- [J3] [Andrea Rosà](#), Eduardo Rosales, Walter Binder. *Accurate Reification of Complete Supertype Information for Dynamic Analysis on the JVM*. In **ACM SIGPLAN Notices**, 52(12):104-116, Dec. 2017. Presented at the 16th International Conference on Generative Programming: Concepts & Experience (GPCE 2017).
- [J4] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *Failure Analysis and Prediction for Big-Data Systems*. In **IEEE Transactions on Services Computing**, 10(6): 984-998, Nov-Dec 2017.
- [J5] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *Actor Profiling in Virtual Execution Environments*. In **ACM SIGPLAN Notices**, 52(3):36-46, Mar. 2017. Presented at the 15th International Conference on Generative Programming: Concepts & Experience (GPCE 2016).
- [J6] [Andrea Rosà](#), Lydia Y. Chen, Robert Birke, Walter Binder. *Demystifying Casualties of Evictions in Big Data Priority Scheduling*. In **SIGMETRICS Perform. Eval. Rev.**, 42(4):12-21, Mar. 2015.
- [J7] Derya Çavdar, [Andrea Rosà](#), Lydia Y. Chen, Walter Binder, Fatih Alagöz. *Quantifying the Brown Side of Priority Schedulers: Lessons from Big Clusters*. In **SIGMETRICS Perform. Eval. Rev.**, 42(3):76-81, Dec. 2014. Presented at Greenmetrics 2014.

Conferences and Symposia

- [C1] Matteo Basso, Eduardo Rosales, Filippo Schiavio, [Andrea Rosà](#), Walter Binder. *Accurate Fork-Join Profiling on the Java Virtual Machine*. In **28th International European Conference on Parallel and Distributed Computing (EuroPar)**, 2022, pp. 1-15, to be published.
- [C2] Eduardo Rosales, [Andrea Rosà](#), Matteo Basso, Alex Villazón, Adriana Orellana, Ángel Zenteno, Jhon Rivero, Walter Binder. *Characterizing Java Streams in the Wild*. In **26th International Conference on Engineering of Complex Computer Systems (ICECCS)**, 2022, pp. 143-152.
- [C3] Matteo Basso, Filippo Schiavio, [Andrea Rosà](#), Walter Binder. *Optimizing Parallel Java Streams*. In **26th International Conference on Engineering of Complex Computer Systems (ICECCS)**, 2022, pp. 23-32.
- [C4] Haiyang Sun, [Andrea Rosà](#), Daniele Bonetta, Walter Binder. *Automatically Assessing and Extending Code Coverage for NPM Packages*. In **Proceedings of the 2nd ACM/IEEE International Conference on Automation of Software Test (AST)**, 2021, pp. 40-49.
- [C5] Eduardo Rosales, [Andrea Rosà](#), Walter Binder. *FJProf: Profiling Fork/Join Applications on the Java Virtual Machine*. In **Proceedings of the 13th EAI International Conference on Performance Evaluation Methodologies and Tools (VALUETOOLS)**, 2020, pp. 128-135.
- [C6] Alex Villazón, Haiyang Sun, [Andrea Rosà](#), Eduardo Rosales, Daniele Bonetta, Isabella De-filippis, Sergio Oporto, Walter Binder. *Automated Large-scale Multi-language Dynamic Program Analysis in the Wild*. In **Proceedings of the 2019 European Conference on Object-Oriented Programming (ECOOP)**, 2019, pp. 20:1-20:27. Artifact evaluated.
- [C7] Aleksandar Prokopec, [Andrea Rosà](#), David Leopoldseder, Gilles Duboscq, Petr Tůma, Martin Studener, Lubomír Bulej, Yudi Zheng, Alex Villazón, Doug Simon, Thomas Würthinger, Walter Binder. *Renaissance: Benchmarking Suite for Parallel Applications on the JVM*. In **Proceedings of the 40th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)**, 2019, pp. 31-47. Artifact evaluated.

- [C8] Filippo Schiavio, Haiyang Sun, Daniele Bonetta, [Andrea Rosà](#), Walter Binder. *NodeMOP: Runtime Verification for Node.js Applications*. In **Proceedings of the 34th ACM/SIGAPP Symposium On Applied Computing (SAC)**, 2019, pp. 1794–1801.
- [C9] Eduardo Rosales, [Andrea Rosà](#), Walter Binder. *lpt: A Tool for Tuning the Level of Parallelism of Spark Applications*. In **Proceedings of the 25th Asia-Pacific Software Engineering Conference (APSEC)**, 2018, pp. 633-637.
- [C10] [Andrea Rosà](#), Eduardo Rosales, Walter Binder. *Analyzing and Optimizing Task Granularity on the JVM*. In **Proceedings of the 16th IEEE/ACM International Symposium on Code Generation and Optimization (CGO)**, 2018, pp. 27–37.
- [C11] Eduardo Rosales, [Andrea Rosà](#), Walter Binder. *tgp: a Task-Granularity Profiler for the Java Virtual Machine*. In **Proceedings of the 24th Asia-Pacific Software Engineering Conference (APSEC)**, 2017, pp. 570-575.
- [C12] [Andrea Rosà](#), Eduardo Rosales, Walter Binder. *Accurate Reification of Complete Supertype Information for Dynamic Analysis on the JVM*. In **Proceedings of the 16th International Conference on Generative Programming: Concepts & Experience (GPCE)**, 2017, pp. 104–116. ACM SIGPLAN Notices, 52(12):104-116, Dec. 2017
- [C13] [Andrea Rosà](#), Walter Binder. *Speeding up Type-specific Instrumentation for the Analysis of Complex Systems*. In **22nd International Conference on Engineering of Complex Computer Systems (ICECCS)**, 2017, pp. 138-141.
- [C14] Haiyang Sun, [Andrea Rosà](#), Omar Javed, Walter Binder. *ADRENALIN-RV: Android Runtime Verification using Load-time Weaving*. In **Proceedings of the 10th IEEE International Conference on Software Testing, Verification and Validation (ICST)**, 2017, pp. 532-539.
- [C15] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *Actor Profiling in Virtual Execution Environments*. In **Proceedings of the 15th International Conference on Generative Programming: Concepts & Experience (GPCE)**, 2016, pp. 36–46. ACM SIGPLAN Notices, 52(3):36-46, Mar. 2017.
- [C16] Omar Javed, Yudi Zheng, [Andrea Rosà](#), Haiyang Sun, Walter Binder. *Extended Code Coverage for AspectJ-based Runtime Verification Tools*. In **Proceedings of the 16th International Conference on Runtime Verification (RV)**, 2016, pp. 219–234.
- [C17] [Andrea Rosà](#), Yudi Zheng, Haiyang Sun, Omar Javed, Walter Binder. *Adaptable Runtime Monitoring for the Java Virtual Machine*. In **Proceedings of the 7th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA)**, 2016, pp. 531–546.
- [C18] Yudi Zheng, [Andrea Rosà](#), Luca Salucci, Yao Li, Haiyang Sun, Omar Javed, Lubomir Bulej, Lydia Y. Chen, Zhengwei Qi, Walter Binder. *AutoBench: Finding Workloads That You Need Using Pluggable Hybrid Analyses*. In **Proceedings of the 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER)**, 2016, pp. 639–643.
- [C19] [Andrea Rosà](#), Lydia Y. Chen, and Walter Binder. *Understanding the Dark Side of Big Data Clusters: An Analysis beyond Failures*. In **Proceedings of the 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN)**, 2015, pp. 207–218.
- [C20] [Andrea Rosà](#), Lydia Y. Chen, and Walter Binder. *Catching Failures of Failures at Big-Data Clusters: a Two-Level Neural Network Approach*. In **Proceedings of the 23rd IEEE International Symposium of Quality of Service (IWQoS)**, 2015, pp. 231–236.
- [C21] [Andrea Rosà](#), Lydia Y. Chen, and Walter Binder. *Predicting and Mitigating Jobs Failures in Big Data Clusters*. In **Proceedings of the 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)**, 2015, pp. 221–230.
- [C22] [Andrea Rosà](#), Lydia Y. Chen, and Walter Binder. *Understanding Unsuccessful Executions in Big-Data Systems*. In **Proceedings of the 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)**, 2015, pp. 741–744.

Workshops

- [W1] Alex Villazón, Haiyang Sun, [Andrea Rosà](#), Eduardo Rosales, Daniele Bonetta, Isabella Defilippis, Sergio Oporto, Walter Binder. *Automated Large-scale Multi-language Dynamic Program Analysis in the Wild*. In **Proceedings of the 2021 Software Engineering Conference (SE)**, 2021, pp. 111.
- [W2] Eduardo Rosales, [Andrea Rosà](#), Walter Binder. *Profiling Streams on the Java Virtual Machine*. In **Proceedings of the 4th Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs)**, in conjunction with <Programming>, 2020, pp. 27–30.
- [W3] Aleksandar Prokopec, [Andrea Rosà](#), David Leopoldseder, Gilles Duboscq, Petr Tůma, Martin Studener, Lubomír Bulej, Yudi Zheng, Alex Villazón, Doug Simon, Thomas Würthinger, Walter Binder. *Renaissance: Benchmarking Suite for Parallel Applications on the JVM*. In **Proceedings of the 2020 Software Engineering Conference (SE)**, 2020, pp. 145–146.
- [W4] [Andrea Rosà](#), Eduardo Rosales, Walter Binder. *Analysis and Optimization of Task Granularity on the Java Virtual Machine*. In **Proceedings of the 2020 Software Engineering Conference (SE)**, 2020, pp. 147.
- [W5] Eduardo Rosales, [Andrea Rosà](#), Walter Binder. *Optimization Coaching for Fork/Join Applications on the Java Virtual Machine*. In **Proceedings of the 3rd Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs)**, in conjunction with <Programming>, 2019, pp. 7:1-7:3.
- [W6] [Andrea Rosà](#), Eduardo Rosales, Filippo Schiavio, Walter Binder. *Understanding Task Granularity on the JVM: Profiling, Analysis, and Optimization*. In **Proceedings of the 2nd Workshop on Modern Language Runtimes, Ecosystems, and VMs (MoreVMs)**, in conjunction with <Programming>, 2018, pp. 54–56.
- [W7] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *Profiling Actor Utilization and Communication in Akka*. In **Proceedings of the 15th ACM SIGPLAN Erlang Workshop (Erlang)**, in conjunction with ACM SIGPLAN ICFP, 2016, pp. 24–32.
- [W8] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *Efficient Profiling of Actor-based Applications in Parallel and Distributed Systems*. In **Proceedings of the 11th Workshop on Implementation, Compilation, Optimization of Object-Oriented Languages, Programs and Systems (ICOOOLPS)**, in conjunction with ECOOP, 2016, pp. 9:1–9:3.
- [W9] Derya Çavdar, [Andrea Rosà](#), Lydia Y. Chen, Walter Binder, Fatih Alagöz. *Quantifying the Brown Side of Priority Schedulers: Lessons from Big Clusters*. **Greenmetrics**, in conjunction with ACM SIGMETRICS, 2014, pp. 6. SIGMETRICS Perform. Eval. Rev., 42(3):76-81, Dec. 2014.

Tool Demonstrations, Artifacts, Extended Abstracts, Posters

- [D1] [Andrea Rosà](#), Walter Binder. *P3: A Profiler Suite for Parallel Applications on the Java Virtual Machine*. In **Proceedings of the 18th Asian Symposium on Programming Languages and Systems (APLAS)**, 2020, pp. 364–372.
- [D2] Alex Villazón, Haiyang Sun, [Andrea Rosà](#), Eduardo Rosales, Daniele Bonetta, Isabella Defilippis, Sergio Oporto, Walter Binder. *NAB: Automated Large-scale Multi-language Dynamic Program Analysis in Public Code Repositories*. In **Proceedings Companion of the 2019 ACM SIGPLAN International Conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH)**, 2019, pp. 9–10.
- [D3] Aleksandar Prokopec, [Andrea Rosà](#), David Leopoldseder, Gilles Duboscq, Petr Tůma, Martin Studener, Lubomír Bulej, Yudi Zheng, Alex Villazón, Doug Simon, Thomas Würthinger, Walter Binder. *Renaissance: A Modern Benchmark Suite for Parallel Applications on the JVM*. In **Proceedings Companion of the 2019 ACM SIGPLAN International Conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH)**, 2019, pp. 11–12.
- [D4] Alex Villazón, Haiyang Sun, [Andrea Rosà](#), Eduardo Rosales, Daniele Bonetta, Isabella Defilippis, Sergio Oporto, Walter Binder. *Automated Large-scale Multi-language Dynamic Program Analysis in the Wild (artifact)*. In **Dagstuhl Artifacts Series (DARTS) 5(2)**: 11:1–11:3, 2019.

- [D5] Haiyang Sun, [Andrea Rosà](#), Walter Binder. *ADRENALIN-RV: Android Runtime Verification using Load-time Weaving*. **10th IEEE International Conference on Software Testing, Verification and Validation (ICST)**, 2017.
- [D6] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *AkkaProf: a Profiler for Akka Actors in Parallel and Distributed Applications*. In **Proceedings of the 14th Asian Symposium on Programming Languages and Systems (APLAS)**, 2016, pp. 139–147.
- [D7] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *An Endpoint Communication Profiling Tool for Distributed Computing Frameworks*. In **Proceedings of the 36th IEEE International Conference on Distributed Computing Systems (ICDCS)**, 2016, pp. 765–766.
- [D8] [Andrea Rosà](#), Lydia Y. Chen, Walter Binder. *When Things Turn Sour at Big Data Clusters: Understanding Unsuccessful Executions*. **5th ACM Symposium on Cloud Computing (SoCC)**, 2014, poster.
- [D9] [Andrea Rosà](#), Walter Binder, Lydia Y. Chen, Marco Gribaudo, Giuseppe Serazzi. *ParSim: a Tool for Workload Modeling and Reproduction of Parallel Applications*. In **Proceedings of the 22nd IEEE International Symposium on Modelling, Analysis & Simulation of Computer and Telecommunication Systems (MASCOTS)**, 2014, pp. 494–497.

Invited Seminars and Talks

- 2020 *Renaissance: Benchmarking Suite for Parallel Applications on the JVM*. Talk at MoreVMs (colocated with <Programming>).
- 2019 *NAB: Automated Large-scale Multi-language Dynamic Program Analysis in Public Code Repositories*. Invited talk at NJR (colocated with SPLASH).
- 2016 *Actor Profiling on the JVM*. Invited talk at the 3rd Virtual Machine Meetup (VMM).
- 2016 *AutoBench: Finding Workloads That You Need Using Pluggable Hybrid Analyses*. Seminar talk at University of Tokyo.
- 2016 *AutoBench: Finding Workloads That You Need Using Pluggable Hybrid Analyses*. Seminar talk at Tokyo Institute of Technology.
- 2016 *AutoBench: Finding Workloads That You Need Using Pluggable Hybrid Analyses*. Seminar talk at Seminar talk at Kyoto University.

Awards and Honors

- 2022 **Invited to submit a journal article to a special issue reserved for best papers**
IEEE Transactions on Reliability, special issue for best papers published at the 26th International Conference on Engineering of Complex Computer Systems (ICECCS).
- 2021 **Invited to submit a journal article to a special issue reserved for best papers**
Wiley Journal of Software: Evolution and Process (JSEP), special issue for best papers published at the 2nd ACM/IEEE International Conference on Automation of Software Test (AST).
- 2020 **Best Reviewer Award**
European Conference on Computer Systems (EuroSys) - Shadow Program Committee
- 2017 **Invited to submit a journal article to a special issue reserved for best papers**
Elsevier Journal of Visual Languages & Computing 49:29–45, special issue for best papers published at the 16th International Conference on Generative Programming: Concepts & Experience (GPCE).
- 2013 **Cum laude MSc degree**
Politecnico di Milano, Italy.

Leadership in Research Projects

- 2020 **Automatic and Scalable Test Coverage Extension via Dependent Applications**
Hasler Foundation; project 20022.
Principal Investigator - Main Applicant.
Amount granted: 49'950 CHF.

Collaboration in Research Projects

- 2020–ongoing **PARACAS: PARallelization tuning using ACCurate and efficient dynamic Analyses on managed runtime Systems**
Swiss National Science Foundation (SNF); project 200020_188688. Project collaborator.
Amount granted: 1M CHF.
- 2022 **Analyzing Runtime Variations of JVM Workloads across Multiple Executions**
Summer 2022 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Undergraduate student: Alen Sugimoto.
- 2021 **Evaluating the Use of Native Code in JVM Languages and Frameworks**
Summer 2021 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Graduate student: Luca Omini.
- 2020 **Analyzing Missed Optimization Opportunities in Dynamic Compilers**
Summer 2020 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Graduate student: Matteo Basso.
- 2020 **Profiling and Analyzing Contention in Parallel Applications**
Summer 2020 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Undergraduate student: Claudio Maggioni.
- 2018–2019 **Massive Program Analysis in the Wild**
Bridging grant with Kyushu University, Japan; project BG 04-122017. Project collaborator.
Amount granted: 25'000 CHF.
- 2018 **Scalable Program Analysis in Large Code Repositories**
Hasler Foundation; project 18012. Project collaborator.
PhD student: Haiyang Sun.
- 2018 **Accurate Profiling of Computations on the JVM using Bytecode-level Metrics**
Summer 2018 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Undergraduate student: Federico van Swaij.
- 2018 **Automatic Benchmark Synthesis for Specific Evaluation Needs**
Summer 2018 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Undergraduate student: Simone Masiero.
- 2016 **Analysis and Optimization of Task Granularity in Concurrent Applications**
Summer 2016 UROP Internship Project, Università della Svizzera italiana. Project collaborator.
Undergraduate student: Samuele Decarli.

Advising Students

PhD

- 2018–current **Eduardo Rosales**, Università della Svizzera italiana. Co-advised with Prof. Walter Binder

MSc

- 2022 **Luca Omini**, Thesis, Università della Svizzera italiana
- 2021 **Luca Omini**, Summer UROP Internship, Università della Svizzera italiana
- 2020 **Sebastien Bouquet**, Thesis, Università della Svizzera italiana
- 2020 **Luca Reina**, Thesis, Università della Svizzera italiana and Università degli Studi di Milano-Bicocca
- 2020 **Matteo Basso**, Thesis, Università della Svizzera italiana and Università degli Studi di Milano-Bicocca
- 2020 **Matteo Basso**, Summer UROP Internship, Università della Svizzera italiana

BSc

- 2022 **Marzio Lunghi**, BSc Project, Università della Svizzera italiana
- 2022 **Alen Sugimoto**, Summer UROP Internship, Università della Svizzera italiana
- 2021 **Claudio Maggioni**, BSc Project, Università della Svizzera italiana
- 2020 **Claudio Maggioni**, Summer UROP Internship, Università della Svizzera italiana

- 2019 **Federico van Swaij**, BSc Project, Università della Svizzera italiana
- 2018 **Federico van Swaij**, Summer UROP Internship, Università della Svizzera italiana
- 2018 **Simone Masiero**, Summer UROP Internship, Università della Svizzera italiana
- 2016 **Samuele Decarli**, Summer UROP Internship, Università della Svizzera italiana

Grants

- 2019 **UCLA travel grant** (1000\$) to attend the 2019 ACM SIGPLAN conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH).
- 2018 **ACM SIGPLAN PAC travel grant** (1400\$) to attend the 23rd ACM SIGPLAN Annual Symposium on Principles and Practice of Parallel Programming (PPoPP).
- 2017 **ACM SIGPLAN PAC travel grant** (1200\$) to attend the 2017 ACM SIGPLAN conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH).
- 2017 **ACM SIGSOFT CAPS travel grant** (800\$) to attend the 8th ACM/SPEC International Conference on Performance Engineering (ICPE).
- 2016 **ACM SIGPLAN PAC travel grant** (800\$) to attend the 2016 ACM SIGPLAN conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH).
- 2016 **ACM SIGPLAN PAC travel grant** (1000\$) to attend the 21st ACM SIGPLAN International Conference on Functional Programming (ICFP).
- 2016 **IEEE travel grant** (1050\$) to attend the 36th IEEE International Conference on Distributed Computing Systems (ICDCS).
- 2015 **IEEE travel grant** (500\$) to attend the 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN).
- 2015 **ACM travel grant** (450\$) to attend the 27th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA).
- 2014 **ACM travel grant** (1000\$) to attend the 5th ACM Symposium on Cloud Computing (SoCC).

Academic Service

Internal Service

- 2021–ongoing **Representative of the Intermediate Body in the Academic Senate**, *Università della Svizzera italiana*.
Member of the Presidential Office, University Council Commission, Electoral Committee
- 2020–2021 **Representative of Postdoctoral Researchers in the Faculty Council**, *Faculty of Informatics, Università della Svizzera italiana*.

Revisor for Funding Schemes

- 2021 Italian Ministry of University and Research - PRIN Call 2020

Conference Organization

- 2017 **Publicity Co-chair**, 8th ACM/SPEC International Conference on Performance Engineering (ICPE) and 8 co-located workshops.
- 2016 **Publicity Chair**, International Conference on Managed Languages & Runtimes Week (ManLang), including the 13th International Conference on Principles and Practices of Programming on the Java Platform: Virtual Machines, Languages, and Tools (PPPJ), the 14th International Workshop on Java Technologies for Real-time and Embedded Systems (JTRES), and the 3rd Virtual Machine Meetup (VMM).
- 2016 **Local Arrangements**, Managed Languages & Runtimes Week (ManLang).
- 2014 **Local Arrangements**, 13th International Conference on Modularity (Modularity).

Program Committee

- 2021 18th International Conference on Managed Programming Languages & Runtimes (MPLR)
- 2020 17th International Conference on Managed Programming Languages & Runtimes (MPLR)

- 2020 Object-Oriented Programming Systems, Languages and Applications (OOPSLA) - Artifact evaluation track
- 2020 European Conference on Object-Oriented Programming (ECOOP) - Artifact evaluation track
- 2020 41th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI) - Artifact evaluation track
- 2020 European Conference on Computer Systems (EuroSys) - Shadow Program Committee
- 2019 16th International Conference on Managed Programming Languages & Runtimes (MPLR, formerly ManLang)
- 2017 8th ACM/SPEC International Conference on Performance Engineering (ICPE) - Posters and Demonstrations track

Reviewer

- 2022 23rd ACM SIGPLAN/SIGBED International Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES)
- 2022 31th ACM/SIGPLAN International Conference on Compiler Construction (CC)
- 2022 Elsevier Journal of Parallel and Distributed Computing
- 2022 13th ACM/SPEC International Conference on Performance Engineering (ICPE)
- 2021 Elsevier Journal of Parallel and Distributed Computing
- 2021 19th International Conference on Service-Oriented Computing (ICSOC)
- 2021 30th ACM/SIGPLAN International Conference on Compiler Construction (CC)
- 2021 European Conference on Object-Oriented Programming (ECOOP)
- 2020 18th International Conference on Service-Oriented Computing (ICSOC)
- 2020 20th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)
- 2020 International Symposium on Code Generation and Optimization (CGO)
- 2020 Elsevier Science of Computer Programming
- 2019 Elsevier Journal of Computer Languages
- 2019 17th International Conference on Service-Oriented Computing (ICSOC)
- 2019 International Symposium on Code Generation and Optimization (CGO)
- 2018 16th International Conference on Service-Oriented Computing (ICSOC)
- 2018 33rd ACM/SIGAPP Symposium On Applied Computing (SAC)
- 2017 14th International Conference on Managed Languages & Runtimes (ManLang)
- 2017 Elsevier Simulation Modelling Practice and Theory
- 2017 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)
- 2016 15th International Conference on Generative Programming: Concepts & Experience (GPCE)
- 2016 14th Asian Symposium on Programming Languages and Systems (APLAS)
- 2016 14th International Conference on Service-Oriented Computing (ICSOC)
- 2016 24th IEEE International Symposium on Modelling, Analysis & Simulation of Computer and Telecommunication Systems (MASCOTS)
- 2016 7th International Symposium on Leveraging Applications of Formal Methods, Verification and Validation (ISoLA)
- 2016 IEEE Transactions on Modeling and Performance Evaluation of Computing Systems
- 2016 6th International Workshop on Big Data and Cloud Performance (DCPerf)
- 2016 7th ACM/SPEC International Conference on Performance Engineering (ICPE)
- 2015 5th ACM/IFIP/USENIX International Middleware Conference (Middleware)
- 2015 14th International Conference on Generative Programming: Concepts & Experience (GPCE)
- 2015 13th International Conference on Service-Oriented Computing (ICSOC)
- 2015 23rd IEEE International Symposium on Modelling, Analysis & Simulation of Computer and Telecommunication Systems (MASCOTS)
- 2015 23rd IEEE International Symposium of Quality of Service (IWQoS)

- 2015 12th IEEE International Conference on Autonomic Computing (ICAC)
- 2015 6th ACM/SPEC International Conference on Performance Engineering (ICPE)
- 2014 12th International Conference on Service-Oriented Computing (ICSOC)
- 2014 12th IEEE Global Communications Conference (GLOBECOM)

Teaching

Instructor and Course Director

- Spring 2023 **Dynamic Program Analysis**, PhD, Università della Svizzera italiana.
Taught with Prof. Walter Binder
- Fall 2022 **Advanced Java Programming**, MSc, Università della Svizzera italiana.
Taught with Prof. Walter Binder
- Fall 2021 **Advanced Java Programming**, MSc, Università della Svizzera italiana.
Taught with Prof. Walter Binder
- Spring 2021 **Introduction to Computer Systems**, *Taught in Italian, original course name: "Introduzione ai Sistemi di Calcolatori"*, MSc, Università della Svizzera italiana.
Taught with Prof. Antonio Carzaniga
- Spring 2021 **Dynamic Program Analysis**, PhD, Università della Svizzera italiana.
Taught with Prof. Walter Binder
- Fall 2020 **Advanced Java Programming**, MSc, Università della Svizzera italiana.
Taught with Prof. Walter Binder
- Spring 2020 **Dynamic Program Analysis**, PhD, Università della Svizzera italiana.
Taught with Prof. Walter Binder
- Fall 2019 **Advanced Java Programming**, MSc, Università della Svizzera italiana.
Taught with Prof. Walter Binder

Adjunct Lecturer

- Fall 2022 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2022 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2021 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2021 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2020 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2020 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2019 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2019 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2018 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2018 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2017 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2017 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder

- Fall 2016 **Introduction to Programming**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Teaching Assistant**
- Fall 2016 **Programming Fundamentals III**, BSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Fall 2015 **Advanced Programming & Design**, MSc, Università della Svizzera italiana.
Teacher: Prof. Walter Binder
- Spring 2015 **Algorithms & Data Structures**, BSc, Università della Svizzera italiana.
Teacher: Prof. Antonio Carzaniga
- Fall 2014 **Computer Networking**, BSc, Università della Svizzera italiana.
Teacher: Prof. Antonio Carzaniga
- Spring 2014 **Databases**, MSc, Università della Svizzera italiana.
Teacher: Prof. Gabriella Pasi

Software

- 2022–ongoing **wosp**. Contributor to wosp, an accurate fork-join profiler for the JVM. Presented at the 28th International European Conference on Parallel and Distributed Computing (EuroPar), 2022.
- 2020–ongoing **P3**. Lead developer of P3, a profiler suite for parallel applications running on the Java Virtual Machine. Presented at the 18th Asian Symposium on Programming Languages and Systems (APLAS), 2020.
- 2019–ongoing **Renaissance**. Contributor to Renaissance, a modern, open, and diversified benchmark suite for the JVM. Member of the reviewing committee. Presented at the 40th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI), 2019.
- 2018–ongoing **NAB**. Contributor to NAB, a framework for automated large-scale multi-language dynamic program analysis in the wild. Presented at the 2019 European Conference on Object-Oriented Programming (ECOOP), 2019.
- 2017–ongoing **tgp**. Lead developer of tgp, a tool for profiling task granularity on the JVM. Presented at the 24th Asia-Pacific Software Engineering Conference (APSEC), 2017.
- 2017–ongoing **DiSL**. Contributor to DiSL, a program analysis framework for Java bytecode. Main contribution presented at the 16th International Conference on Generative Programming: Concepts & Experience (GPCE), 2017.
- 2017–ongoing **Shadow VM**. Contributor to Shadow VM, an extension of DiSL that improves code coverage and isolation of dynamic analyses.
- 2016–ongoing **AutoBench**. Contributor to AutoBench, a framework for automating program analysis on large-scale open-source code repositories. Presented at the 23rd IEEE International Conference on Software Analysis, Evolution, and Reengineering (SANER), 2016.
- 2016 **AkkaProf**. Lead developer of AkkaProf, a tool for profiling Akka actors in parallel and distributed applications. Presented at the 14th Asian Symposium on Programming Languages and Systems (APLAS), 2016.
- 2012–2013 **ParSim**. Lead developer of ParSim, a software tool for modeling, reproduction, and analysis of arbitrary workloads in parallel systems. Presented at the 22nd IEEE International Symposium on Modelling, Analysis & Simulation of Computer and Telecommunication Systems (MASCOTS), 2014.

References

- [1] **Prof. Walter Binder**, *Full Professor*, Faculty of Informatics, Università della Svizzera italiana (USI), via Giuseppe Buffi 13, Lugano, Switzerland, CH-6904.
E-mail: walter.binder@usi.ch. Phone: +41 58 666 4303.
- [2] **Prof. Lydia Y. Chen**, *Associate Professor*, Distributed Systems Group, TU Delft, Van Mourik Broekmanweg 6, Delft, The Netherlands, NL-2628.
E-mail: y.chen-10@tudelft.nl. Phone: +41 44 724 8379.

- [3] **Prof. Petr Tůma**, *Full Professor*, Department of Distributed and Dependable Systems, Charles University, Malostranské náměstí 25, Prague, Czech Republic, CZ-11800.
E-mail: petr.tuma@d3s.mff.cuni.cz. Phone: +420 951 554 267.
- [4] **Prof. Giuseppe Serazzi**, *Emeritus Professor*, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano, via Ponzio 34/5, Milan, Italy, IT-20133.
E-mail: giuseppe.serazzi@polimi.it. Phone: +39 02 2399 3535.
- [5] **Prof. Alex Villazon**, *Full Professor*, Director of Centro de Investigaciones en Nuevas Tecnologías Informáticas, Universidad Privada Boliviana, Av. Victor Ustariz Km 6.5, Cochabamba, Bolivia.
E-mail: avillazon@upb.edu. Phone: +591 (4) 42 68287.
- [6] **Prof. Lubomír Bulej**, *Associate Professor*, Department of Distributed and Dependable Systems, Charles University, Malostranské náměstí 25, Prague, Czech Republic, CZ-11800.
E-mail: lubomir.bulej@d3s.mff.cuni.cz. Phone: +420 221 914 267.
- [7] **Prof. Marco Gribaudo**, *Associate Professor*, Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano, via Ponzio 34/5, Milan, Italy, IT-20133.
E-mail: marco.gribaudo@polimi.it. Phone: +39 02 2399 3568.