Dr. Andrea Rosà

Curriculum Vitae

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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, Concurrent and Parallel Programming, Static and Dynamic Program Analysis, Bytecode Instrumentation, Intermediate-representation (IR) Instrumentation, Just-in-time (JIT) Compilation, Software Testing, Reflection, Benchmarking, Actor Frameworks, Runtime Monitoring and Verification, Empirical Evaluation, Large-scale Analysis and Evaluation, 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, 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] 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, to be published.

[C2] 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.

[C3] 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 2019 European Conference on Object-Oriented Programming (ECOOP)**, 2019, pp. 20:1-20:27. Artifact evaluated.

[C4] Aleksandar Prokopec, Andrea Rosà, David Leopoldseder, Gilles Duboscq, Petr Tůma, Martin Studener, Lubomìr 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.

[C5] 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.

[C6] Eduardo Rosales, Andrea Rosà, Walter Binder. *Ipt: 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.

[C7] 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.

[C8] 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.

[C9] 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

[C10] 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.

[C11] 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.

[C12] 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.

[C13] 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.

[C14] 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.

[C15] Yudi Zheng, Andrea Rosà, Luca Salucci, Yao Li, Haiyang Sun, Omar Javed, Lubomìr 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.

[C16] 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.

[C17] 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.

[C18] 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.

[C19] 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, Lubomìr 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, Lubomìr 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

2020 **Best Reviewer Award**
European Conference on Computer Systems (EuroSys) - Shadow Program Committee

Approved 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.

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

2021 **Luca Omini**, Thesis, 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

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

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

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 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 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

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. 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.

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