

Andrea Rosà

Curriculum Vitae

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Contact Information

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Research Interests and Experience

The goal of my research is understanding and removing inefficiencies of applications executing on language virtual machines.

Parallel Workload Optimization Analysis and optimization of tasks, actors and streams, efficient and accurate profiling for parallel-programming libraries and constructs, SIMD parallelism and vectorization (Java Vector API).

Compiler Optimizations Just-in-time (JIT) compilation, Ahead-of-time (AOT) compilation, accurate profiling of compiler-internal events, optimization failures, Profile-Guided Optimizations (PGO).

Benchmarking Benchmark design (Renaissance, JVBench) and synthesis, performance analysis and optimization, benchmarking in the wild.

Education

11.2024 **Habilitation for Associate Professorship in Computer Science Engineering (ASN)**, Italy.

04.2021 **Habilitation for Associate Professorship in Informatics (ASN)**, Italy.

10.2013 – 08.2018 **PhD in Informatics, USI**.
Advisor: Prof. Walter Binder

09.2011 – 10.2013 **MSc in Computer Science Engineering (with honors)**, *Politecnico di Milano*, Italy.
Advisor: Prof. Giuseppe Serazzi

09.2008 – 09.2011 **BSc in Computer Science Engineering**, *Politecnico di Milano*.
Advisor: Prof. Carlo Ghezzi

Professional Experience

03.2024 – ongoing **Scientific Collaborator and Lecturer, USI**.

09.2018 – 02.2024 **Postdoctoral Researcher and Lecturer, USI**.

10.2013 – 08.2018 **Research and Teaching Assistant, USI**.

Funded Research Projects

Principal Investigator

- 2025 – ongoing **Understanding and Mitigating Performance Variability on Managed Runtimes**
USI Fondo Istituzionale per la Ricerca (FIR).
Amount granted: 120'000 CHF
- 2020 **Automatic and Scalable Test Coverage Extension via Dependent Applications**
Hasler Stiftung; project 20022.
Amount granted: 49'950 CHF

Teaching (USI)

Lecturer and Course Director

- 2019 – ongoing **Advanced Java Programming**, MSc, 6 ECTS, with Prof. Walter Binder.
- 2020 – ongoing **Dynamic Program Analysis**, PhD, 4 ECTS, with Prof. Walter Binder.
- 2021 **Introduction to Computer Systems**, *Taught in Italian, original course name: "Introduzione ai Sistemi di Calcolatori"*, MSc, 5 ECTS, with Prof. Antonio Carzaniga.

Adjunct Lecturer

- 2017 – ongoing **Programming Fundamentals III**, BSc, 6 ECTS.
- 2024 **Introduction to Programming (Python)**, MSc, 6 ECTS.
- 2016 – 2023 **Introduction to Programming**, MSc, 6 ECTS.

Teaching Assistant

- 2016 **Programming Fundamentals III**, BSc, 6 ECTS.
- 2015 **Advanced Programming & Design**, MSc, 6 ECTS.
- 2015 **Algorithms & Data Structures**, BSc, 6 ECTS.
- 2014 **Computer Networking**, BSc, 6 ECTS.
- 2014 **Databases**, MSc, 6 ECTS.

External Service

Workshop and Program Co-chair

- 2025 **ICOOOLPS**, 20th International Workshop on Implementation, Compilation, Optimization of OO Languages, Programs and Systems.
Co-located with ECOOP
- 2023 **VMIL**, 15th ACM SIGPLAN International Workshop on Virtual Machines and Language Implementations.
Co-located with SPLASH.

Steering Committee Member

- 2024 – ongoing **VMIL**, ACM SIGPLAN International Workshop on Virtual Machines and Language Implementations.

Organizing Committee Member

- 2017 **Publicity Co-chair, ICPE**, ACM/SPEC International Conference on Performance Engineering and 8 co-located workshops.

- 2016 **Publicity Chair, MPLR**, International Conference on Managed Languages & Runtimes, including the International Conference on Principles and Practices of Programming on the Java Platform: Virtual Machines, Languages, and Tools (PPPJ), the International Workshop on Java Technologies for Real-time and Embedded Systems (JTRES), and the Virtual Machine Meetup (VMM).
- 2016 **Local Organizer, MPLR**, International Conference on Managed Languages & Runtimes.
- 2014 **Local Organizer, Modularity**, International Conference on Modularity.

Program Committee Member

- 2025 **Onward! Papers**, Track of the ACM SIGPLAN International Conference on Systems, Programming, Languages and Applications: Software for Humanity (**SPLASH**).
- 2024 **GPCE**, ACM SIGPLAN International Conference on Generative Programming: Concepts & Experiences.
- 2019–2021 **MPLR**, International Conference on Managed Programming Languages & Runtimes.
- 2020 **OOPSLA**, Object-Oriented Programming Systems, Languages and Applications - Artifact evaluation track.
- 2020 **ECOOP**, European Conference on Object-Oriented Programming - Artifact evaluation track.
- 2020 **PLDI**, ACM SIGPLAN Conference on Programming Language Design and Implementation - Artifact evaluation track.
- 2020 **EuroSys**, European Conference on Computer Systems - Shadow Program Committee. **Best reviewer award**.
- 2017 **ICPE**, ACM/SPEC International Conference on Performance Engineering - Posters and Demonstrations track.

Reviewer for Funding Schemes

- 2021 **Italian Ministry of University and Research**, PRIN Call 2020.

Reviewer for Journals

- 2025 Springer The Journal of Supercomputing
- 2024, 2025 The Art, Science, and Engineering of Programming
- 2021–2024 Elsevier Journal of Parallel and Distributed Computing
- 2023, 2024 Elsevier Sustainable Computing: Informatics and Systems
- 2022 ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOMPECS)
- 2020 Elsevier Science of Computer Programming
- 2019 Elsevier Journal of Computer Languages
- 2017 Elsevier Simulation Modelling Practice and Theory
- 2016 IEEE Transactions on Modeling and Performance Evaluation of Computing Systems

Reviewer for Conferences

- 2025 **IPDPS**, IEEE International Parallel & Distributed Processing Symposium.
- 2022, 2024 **LCTES**, ACM SIGPLAN/SIGBED International Conference on Languages, Compilers, and Tools for Embedded Systems.

- 2023, 2024 **EuroPar**, International European Conference on Parallel and Distributed Computing.
- 2015, 2016, 2023 **GPCE**, International Conference on Generative Programming: Concepts & Experience.
- 2023 **MPLR**, International Conference on Managed Programming Languages & Runtimes.
- 2023 **COP**, ACM International Workshop on Context-Oriented Programming and Advanced Modularity.
- 2015–16, 2022–23 **ICPE**, ACM/SPEC International Conference on Performance Engineering.
- 2014–2022 **ICSOC**, International Conference on Service-Oriented Computing.
- 2021, 2022 **CC**, ACM/SIGPLAN International Conference on Compiler Construction.
- 2021 **ECOOP**, European Conference on Object-Oriented Programming.
- 2017, 2020 **CCGrid**, IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing.
- 2018 **SAC**, ACM/SIGAPP Symposium On Applied Computing.
- 2017 **ManLang**, International Conference on Managed Languages & Runtimes.
- 2016 **APLAS**, Asian Symposium on Programming Languages and Systems.
- 2015, 2016 **MASCOTS**, IEEE International Symposium on Modelling, Analysis & Simulation of Computer and Telecommunication Systems.
- 2016 **ISoLA**, International Symposium on Leveraging Applications of Formal Methods, Verification and Validation.
- 2016 **DCPerf**, International Workshop on Big Data and Cloud Performance.
- 2015 **Middleware**, ACM/IFIP/USENIX International Middleware Conference.
- 2015 **IWQoS**, IEEE International Symposium of Quality of Service.
- 2015 **ICAC**, IEEE International Conference on Autonomic Computing.
- 2014 **GLOBECOM**, IEEE Global Communications Conference.

Internal Service (USI)

- 2023 – ongoing **Member of the Rectorate’s working group for revising the structure of the USI academic and intermediate bodies.**
- 2024 **Committee member of the Daccò professorship for the Faculty of Informatics.**
- 2021 – 2023 **Member of the Academic Senate of USI.**
 I was also a member of the following Senate commissions, committees and working groups:
 - Presidential Office.
 - University Council Commission.
 - Legal Commission.
 - Electoral Committee.
 - Committee to nominate the USI Rector.
 - Working group to integrate intermediate-body representatives in professorship committees.
- 2020 – 2021 **Representative of postdoctoral researchers in the USI Faculty of Informatics council.**

Invited Seminars and Talks

- 2022 **P3: A Profiler Suite for Parallel Applications on the Java Virtual Machine.**
Talk at SPLASH.
- 2020 **Renaissance: Benchmarking Suite for Parallel Applications on the JVM.**
Talk at MoreVMs (co-located with <Programming>).

- 2019 **NAB: Automated Large-scale Multi-language Dynamic Program Analysis in Public Code Repositories.**
Talk at NJR (co-located with SPLASH).
- 2016 **Actor Profiling on the JVM.**
Talk at the 3rd Virtual Machine Meetup (VMM).
- 2016 **AutoBench: Finding Workloads That You Need Using Pluggable Hybrid Analyses.**
Seminar talks at The University of Tokyo, Tokyo Institute of Technology and Kyoto University.

Advising Students (USI)

PhD

- 2019 – ongoing **Matteo Basso.** Co-advised with Prof. Walter Binder.
Compiler-IR-Level Profiling to Analyze and Perform Compiler Optimizations (tentative)
- 2018–2022 **Dr. Eduardo Rosales.** Co-advised with Prof. Walter Binder.
Analysis and Optimization of Java Streams

MSc

- ongoing **Mattia Biancini,** USI and Università degli Studi di Milano-Bicocca.
Analyzing Performance Variability in Applications running on the Java Virtual Machine (tentative)
- ongoing **Jacob Salvi**
Investigating Profile Mismatch on the Java Virtual Machine (tentative)
- ongoing **Joy Albertini**
Enhancing Vectorization in the Java Class Library (tentative)
- ongoing **Alessio Giovagnini**
From ASM to Class-File API. The Case of DiSL (tentative)
- 2023 **Pietro Rodolfo Masera**
A Tool to Better Understand Dynamic Compilation on the Java Virtual Machine
- 2023 **Leonardo Bohnhoff**
Java Virtual Threads: Analysis and Performance Evaluation
- 2022 **Luca Omini**
Java Vector API: Benchmarking and Performance Analysis
- 2020 **Sebastien Bouquet**
Approximating Compiler-Level Profiling with Bytecode Instrumentation
- 2020 **Luca Reina,** USI and Università degli Studi di Milano-Bicocca.
Profiling and Analyzing Concurrent Libraries on the Java Virtual Machine
- 2020 **Matteo Basso,** USI and Università degli Studi di Milano-Bicocca.
Analyzing Missed Optimization Opportunities in Dynamic Compilers

BSc (Co-advising)

- 2024 **Thomas Bertini**
Java Vector API: In-depth Performance Analysis
- 2024 **Riccardo Carmellini**
Better Understanding Method Inlining on the Java Virtual Machine

- 2022 **Marzio Lunghi**
JEDI: Benchmark Suite for the Java Stream API
- 2021 **Claudio Maggioni**
Understanding and Comparing Unsuccessful Executions in Large Datacenters
- 2019 **Federico van Swaaij**
Profiling and Characterizing the Use of Concurrency Primitives on the Java Platform

Research Internships (Co-mentoring)

- 2023 **Mohamad Ali Atwi**
- 2023 **Riccardo Carmellini**
- 2023 **Thomas Bertini**
- 2021 **Luca Omini**
- 2020 **Claudio Maggioni**
- 2020 **Matteo Basso**
- 2018 **Federico van Swaaij**
- 2018 **Simone Masiero**
- 2016 **Samuele Decarli**

Software

All software is accompanied by publications.
Most of the software is accompanied by peer-evaluated artifacts.
The year refers to the public release or the starting date of the work.

Project Lead

- 2020 **P3**. Profiler suite for parallel applications running on the JVM. Presented at APLAS 2020.
- 2017 **tgp**. Tool for profiling task granularity on the JVM. Presented at CGO 2018.
- 2016 **AkkaProf**. Tool for profiling Akka actors in parallel and distributed applications. Presented at GPCE 2016.
- 2012 **ParSim**. Tool for modeling, reproduction, and analysis of arbitrary workloads in parallel systems. Presented at MASCOTS 2014.

Contributor

- 2023 **JVBench**. Benchmark suite for the Java Vector API. Presented at CC 2023.
- 2022 **StreamProf**. Profiler for stream-based applications running on the JVM. Presented at Programming 2023.
- 2019 **Renaissance**. Modern, open, and diversified benchmark suite for the JVM. Member of the reviewing committee. Presented at PLDI 2019.
- 2018 **NAB**. Framework for automated large-scale multi-language dynamic program analysis in the wild. Presented at ECOOP 2019.
- 2017 **DiSL**. Program analysis framework for Java bytecode. Main contribution (DiSL Reflection API) presented at GPCE 2017.
- 2017 **Shadow VM**. Extension of DiSL that improves code coverage and isolation of dynamic analyses.

2016 **AutoBench**. Framework for automating program analysis on large-scale open-source code repositories. Presented at SANER 2016.

References

- [1] **Walter Binder**, *Full Professor*, Università della Svizzera italiana (USI).
E-mail: walter.binder@usi.ch. Phone: +41 58 666 4303.
- [2] **Shigeru Chiba**, *Full Professor, Director (Dean) of the Information Technology Center*, The University of Tokyo.
E-mail: chiba@g.ecc.u-tokyo.ac.jp.
- [3] **Hidehiko Masuhara**, *Full Professor, Dean of the School of Computing*, Tokyo Institute of Technology.
E-mail: masuhara@acm.org. Phone: +81-3-5734-3228.
- [4] **Petr Tůma**, *Full Professor*, Charles University, Prague.
E-mail: petr.tuma@d3s.mff.cuni.cz. Phone: +420 951 554 267.
- [5] **Stefan Marr**, *Associate Professor (Senior Lecturer)*, University of Kent.
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Andrea Rosà

Publication List

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

Articles in Journals and Newsletters

- [J10] Matteo Basso, Aleksandar Prokopec, Andrea Rosà, Walter Binder. *Optimization-Aware Compiler-Level Event Profiling*. In **ACM Transactions on Programming Languages and Systems (TOPLAS)**, **45(2):1–50**, 2023. Presented at the 2023 ACM SIGPLAN conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH 2023).
- [J9] Eduardo Rosales, Matteo Basso, Andrea Rosà, Walter Binder. *Large-scale Characterization of Java Streams*. In **Software: Practice and Experience**, **53(9):1763–1792**, 2023.
- [J8] Eduardo Rosales, Matteo Basso, Andrea Rosà, Walter Binder. *Profiling and Optimizing Java Streams*. In **The Art, Science, and Engineering of Programming**, **7(3), 10:1–10:39**, 2023. Artifact evaluated.
- [J7] 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**, 2019.
- [J6] Andrea Rosà, Walter Binder. *Optimizing Type-specific Instrumentation on the JVM with Reflective Supertype Information*. In **Journal of Visual Languages & Computing** **49:29–45**, 2018.
- [J5] 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**, 2017.
- [J4] 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**, 2017. Presented at the 16th International Conference on Generative Programming: Concepts & Experience (GPCE 2017).
- [J3] Andrea Rosà, Lydia Y. Chen, Walter Binder. *Actor Profiling in Virtual Execution Environments*. In **ACM SIGPLAN Notices**, **52(3):36–46**, 2017. Presented at the 15th International Conference on Generative Programming: Concepts & Experience (GPCE 2016).
- [J2] 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**, 2015.
- [J1] 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**, 2014. Presented at Greenmetrics 2014.

Full Papers in Proceedings

- [C22] Matteo Basso, Aleksandar Prokopec, Andrea Rosà, Walter Binder. *Improving Native-Image Startup Performance*. In **Proceedings of the 23rd IEEE/ACM International Symposium on Code Generation and Optimization (CGO)**, 2025, pp. 689–703. Artifact evaluated.
- [C21] Júnior Löff, Filippo Schiavio, Andrea Rosà, Matteo Basso, Walter Binder. *Vectorized Intrinsic Can Be Replaced with Pure Java Code without Impairing Steady-State Performance*. In **Proceedings of the 15th ACM/SPEC International Conference on Performance Engineering (ICPE)**, 2024, pp. 14–24. Artifact evaluated. **Best-paper runner-up award**.

- [C20] Matteo Basso, Andrea Rosà, Luca Omini, Walter Binder. *Java Vector API: Benchmarking and Performance Analysis*. In **Proceedings of the 32nd ACM/SIGPLAN International Conference on Compiler Construction (CC)**, 2023, pp. 1–12. Artifact evaluated.
- [C19] Matteo Basso, Eduardo Rosales, Filippo Schiavio, Andrea Rosà, Walter Binder. *Accurate Fork-Join Profiling on the Java Virtual Machine*. In **Proceedings of the 28th International European Conference on Parallel and Distributed Computing (EuroPar)**, 2022, pp. 35–50.
- [C18] Eduardo Rosales, Andrea Rosà, Matteo Basso, Alex Villazón, Adriana Orellana, Ángel Zenteno, Jhon Rivero, Walter Binder. *Characterizing Java Streams in the Wild*. In **Proceedings of the 26th International Conference on Engineering of Complex Computer Systems (ICECCS)**, 2022, pp. 143–152.
- [C17] Matteo Basso, Filippo Schiavio, Andrea Rosà, Walter Binder. *Optimizing Parallel Java Streams*. In **Proceedings of the 26th International Conference on Engineering of Complex Computer Systems (ICECCS)**, 2022, pp. 23–32.
- [C16] 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.
- [C15] 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.
- [C14] 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.
- [C13] 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.
- [C12] 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.
- [C11] 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.
- [C10] 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
- [C9] 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.
- [C8] 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.
- [C7] 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.

- [C6] 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.
- [C5] 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.
- [C4] 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.
- [C3] 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.
- [C2] 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.
- [C1] 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.

Short Papers in Proceedings

- [S14] Andrea Rosà, Matteo Basso, Leonardo Bohnhoff, Walter Binder. *Automated Runtime Transition between Virtual and Platform Threads in the Java Virtual Machine*. In **Proceedings of the 30th Asia-Pacific Software Engineering Conference (APSEC)**, 2023, pp. 607–611.
- [S13] Filippo Schiavio, Andrea Rosà, Walter Binder. *SQL to Stream with S2S: An Automatic Benchmark Generator for the Java Stream API*. In **Proceedings of the 21nd International Conference on Generative Programming: Concepts & Experience (GPCE)**, 2022, pp. 179–186.
- [S12] 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.
- [S11] 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.
- [S10] 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.
- [S9] 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.
- [S8] 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.
- [S7] 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.

- [S6] 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.
- [S5] 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.
- [S4] 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.
- [S3] 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.
- [S2] 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.
- [S1] 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.

■ Editor of Proceedings

- [E1] Andrea Rosà, Martin Henz. **Proceedings of the 15th ACM SIGPLAN International Workshop on Virtual Machines and Intermediate Languages, VMIL 2023**, Cascais, Portugal, 2023.

■ Other Contributions in Proceedings

- [O7] 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.
- [O6] Aleksandar Prokopec, Andrea Rosà, David Leopoldseder, Gilles Duboscq, Petr Tuma, Martin Studener, Lubomir 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.
- [O5] 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.
- [O4] Aleksandar Prokopec, Andrea Rosà, David Leopoldseder, Gilles Duboscq, Petr Tuma, Martin Studener, Lubomir 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.
- [O3] 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.

- [O2] 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 Ser. 5(2):11:1-11:3**, 2019.
- [O1] 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.