

Dr. Andrea Rosà

Publication List

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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 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.

- [C7] Aleksandar Prokopec, [Andrea Rosà](#), David Leopoldseider, 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, Lubomír 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 Leopoldseeder, 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 Leopoldseeder, 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.