

Publication List

Martin AVANZINI, PhD

Thesis

- [1] M. Avanzini. “Verifying Polytime Computability Automatically”. PhD thesis. University of Innsbruck, 2013.
- [2] M. Avanzini. “Automation of Polynomial Path Orders”. MA thesis. University of Innsbruck, 2009.

Articles

- [1] Martin Avanzini et al. “Hopping Proofs of Expectation-Based Properties: Applications to Skiplists and Security Proofs”. In: *Proc. ACM Program. Lang.* 8.OOPSLA1 (2024), pp. 784–809. doi: 10.1145/3649839.
- [2] Martin Avanzini, Georg Moser, and Michael Schaper. “Automated Expected Value Analysis of Recursive Programs”. In: *Proc. ACM Program. Lang.* 7.PLDI (2023), pp. 1050–1072. doi: 10.1145/3591263.
- [3] Martin Avanzini, Gilles Barthe, and Ugo Dal Lago. “On continuation-passing transformations and expected cost analysis”. In: *Proc. ACM Program. Lang.* 5.ICFP (2021), pp. 1–30. doi: 10.1145/3473592.
- [4] Martin Avanzini, Ugo Dal Lago, and Akihisa Yamada. “On probabilistic term rewriting”. In: *Sci. Comput. Program.* 185 (2020). doi: 10.1016/J.SCIC0.2019.102338.
- [5] Martin Avanzini, Georg Moser, and Michael Schaper. “A modular cost analysis for probabilistic programs”. In: *Proc. ACM Program. Lang.* 4.OOPSLA (2020), 172:1–172:30. doi: 10.1145/3428240.
- [6] Martin Avanzini and Ugo Dal Lago. “On sharing, memoization, and polynomial time”. In: *Inf. Comput.* 261 (2018), pp. 3–22. doi: 10.1016/J.IC.2018.05.003.
- [7] Martin Avanzini and Ugo Dal Lago. “Automating sized-type inference for complexity analysis”. In: *Proc. ACM Program. Lang.* 1.ICFP (2017), 43:1–43:29. doi: 10.1145/3110287.
- [8] Martin Avanzini and Georg Moser. “A Combination Framework for Complexity”. In: *Inf. Comput.* 248 (2016), pp. 22–55. doi: 10.1016/J.IC.2015.12.007.
- [9] Martin Avanzini, Naohi Eguchi, and Georg Moser. “A new order-theoretic characterisation of the polytime computable functions”. In: *Theor. Comput. Sci.* 585 (2015), pp. 3–24. doi: 10.1016/J.TCS.2015.03.003.
- [10] Martin Avanzini and Georg Moser. “Polynomial Path Orders”. In: *Log. Methods Comput. Sci.* 9.4 (2013). doi: 10.2168/LMCS-9(4:9)2013.

International Conference Proceedings

- [1] Martin Avanzini et al. “On the Hardness of Analyzing Quantum Programs Quantitatively”. In: *Programming Languages and Systems - 33rd European Symposium on Programming, ESOP 2024, Held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2024, Luxembourg City, Luxembourg, April 6-11, 2024, Proceedings, Part II*. Vol. 14577. Lecture Notes in Computer Science. Springer, 2024, pp. 31–58. doi: 10.1007/978-3-031-57267-8_2.
- [2] Davide Davoli, Martin Avanzini, and Tamara Rezk. “On Kernel’s Safety in the Spectre Era (And KASLR is Formally Dead)”. In: *31st ACM Conference on Computer and Communications Security (CCS)*. accepted. 2024, pp. 1–15.

- [3] Martin Avanzini et al. "Quantum Expectation Transformers for Cost Analysis". In: *LICS '22: 37th Annual ACM/IEEE Symposium on Logic in Computer Science, Haifa, Israel, August 2 - 5, 2022*. ACM, 2022, 10:1–10:13. doi: 10.1145/3531130.3533332.
- [4] Martin Avanzini, Ugo Dal Lago, and Alexis Ghyselen. "Type-Based Complexity Analysis of Probabilistic Functional Programs". In: *34th Annual ACM/IEEE Symposium on Logic in Computer Science, LICS 2019, Vancouver, BC, Canada, June 24–27, 2019*. IEEE, 2019, pp. 1–13. doi: 10.1109/LICS.2019.8785725.
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- [8] Martin Avanzini and Ugo Dal Lago. "On Sharing, Memoization, and Polynomial Time". In: *32nd International Symposium on Theoretical Aspects of Computer Science, STACS 2015, March 4-7, 2015, Garching, Germany*. Vol. 30. LIPIcs. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2015, pp. 62–75. doi: 10.4230/LIPICs.STACS.2015.62.
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Workshop Papers

- [1] Martin Avanzini et al. "On the Hardness of Analyzing Quantum Programs Quantitatively". In: *Quantum Physics and Logic 2024*. 2024.
- [2] Martin Avanzini et al. "Quantum Expectation Transformers for Cost Analysis". In: *Quantum Physics and Logic 2022*. 2022.
- [3] M. Avanzini, M. Schaper, and G. Moser. "Modular Runtime Complexity Analysis of Probabilistic While Programs". In: *Workshop on Developments in Implicit Computational Complexity and Workshop on Foundational and Practical Aspects of Resource Analysis 2019*. 2019.
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- [5] Martin Avanzini and Michael Schaper. "GUBS Upper Bound Solver (Extended Abstract)". In: *Proceedings 8th Workshop on Developments in Implicit Computational Complexity and 5th Workshop on Foundational and Practical Aspects of Resource Analysis, DICE-FOPARAETAPS 2017, Uppsala, Sweden, April 22-23, 2017*. Vol. 248. EPTCS. 2017, pp. 17–23. doi: 10.4204/EPTCS.248.6.
- [6] M. Avanzini, U. Dal Lago, and G. Moser. "Higher-Order Complexity Analysis: Harnessing First-Order Tools." In: *6th International Workshop on Developments in Implicit Complexity*. 2015.
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- [12] M. Avanzini and N. Eguchi. "A New Path Order for Exponential Time". In: *11th Workshop on Termination (WST)*. 2010.
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Misc

- [1] M. Avanzini. *Term Rewriting Characterizations of Complexity Classes*. 2007.