KONSTANTIN KUEFFNER

Affiliation: Institute of Science and Technology Austria | E-Mail: konstantin.kueffner@ista.ac.at
Webpage: konstantinrk.github.io/homepage | GitHub: https://github.com/KonstantinRK

EDUCATION

Ph.D. Computer Science | Institute of Science and Technology | 09.2020 - present
Advisor: Thomas A. Henzinger
Thesis: "Monitoring Algorithmic Fairness in Stochastic Systems"
Research Interests: Runtime Verification, Formal Methods, Stochastic Processes, Non-Asymptotic Statistics, Learning Theory, Responsible Computing

M.Sc. Logic & Computation | Vienna University of Technology | 09.2017 - 11.2021
Performance: GPA 1.0 over 120 ECTS [Graded from 5 (fail) to 1 (perfect grade)]
Advisor: Agata Ciabattoni.
Thesis: "A Comprehensive Survey of the Actual Causality Literature"
Comment: Mathematical Logic, Complexity Theory, Computability Theory, Formal Methods, and Algorithms.

B.Sc. Business Informatics | Vienna University of Economics | 09.2012 - 11.2016
Performance: GPA 1.48 over 221.5 ECTS [Top 17 out of 5416 students]
Comment: Double Major: Business and Business Informatics

ACADEMIC AWARDS

Dean's List | Vienna University of Economics | 2014 & 2015
Comment: List of the top 40 students across all undergraduate programs.

Academic Excellence Scholarship | Vienna University of Economics | 2014 & 2015

ACADEMIC WORK EXPERIENCE

Ph.D. Student | Institute of Science and Technology | 2020-present
Teaching Assistant: "Formal Methods" & "Formalisms for Computer Scientist"
Rotations: "Dynamic data race detection in TSO-model" with Krishnendu Chatterjee; "Runtime monitoring of fairness in image classification" with Thomas Henzinger; "Out-of-specification testing of convolutional neural networks during runtime" with Christoph Lampert
Other: Student Track Representative & Committee for Young Scientist Symposium

Research Assistant | Vienna University of Economics | 11.2018-09.2020
Comment: I served as a research assistant for Mark Strembeck. I implemented an R-package for the analysis of temporal networks.

Teaching Assistant | 09.2015-09.2020
Institution: Vienna University of Technology & Vienna University of Business.
Courses: Data Science, Networks, Network Security, Knowledge Based Systems.

WORK EXPERIENCE

Internship - Facility Management | Austrian Parliament | 07.2015 - 08.2015

Civil Service - Paramedic | Red Cross | 07.2012 - 04.2013

PUBLICATIONS

Thomas A. Henzinger, Konstantin Kueffner, and Kaushik Mallik. "Monitoring Algorithmic Fairness under Partial Observations." International Conference on Runtime Verification. 2023.

Thomas A. Henzinger, Mahyar Karimi, Konstantin Kueffner, and Kaushik Mallik. "Runtime Monitoring of Dynamic Fairness Properties." Proceedings of the 2023 ACM Conference on Fairness, Accountability, and Transparency. 2023.

Thomas A. Henzinger, Mahyar Karimi, Konstantin Kueffner, and Kaushik Mallik. "Monitoring Algorithmic Fairness". Computer Aided Verification. 2023.

Konstantin Kueffner, Anna Lukina, Christian Schilling, Thomas A. Henzinger. "Into the unknown: active monitoring of neural networks (extended version)." International Journal on Software Tools for Technology Transfer. 2023.

Konstantin Kueffner, Mark Strembeck. "Toward a generalized notion of discrete time for modeling temporal networks". Network Science. 2021

Konstantin Kueffner, Mark Strembeck. "A Generalized Notion of Time for Modeling Temporal Networks." International Conference on Complexity, Future Information Systems and Risk. 2019

Other

Technical Skills:

Programming Languages: Haskell, Java, Python, R, Rust, (Unix-)Shell
Machine Learning: NumPy, Pandas, SciPy, Seaborn, Slurm, TensorFlow
Markup Languages: CSS, HTML, XML (and XSL)
Databases: MongoDB, MS-Access, MySQL, SQLite
Formal Methods: ASP, Lean, MiniSAT, Vampire, Z3

Additional Education: Marktoberdorf (2023), ESSLLI (2019), LSE Summer School (2018), 1 Semester of Non-Degree Courses at Vienna University of Technology (2017)

Talks: RV (2023), ELLIS TALK (2023), AVM (2023), CAV (2023), FAccT (2023), FORSYTE Talk (2022), AVM (2022), SBA Research talk (2019), COMPLEXIS (2019)

Volunteering: Geriatric Care (2019-2020), Red Cross Ball committee (2015-2020), Paramedic (2013-2014)

Languages: German (Native), English (C1)