N. Ege Saraç

E-mail: esarac@ista.ac.at **Homepage:** egesarac.github.io **Profile:** Google Scholar, DBLP

Education

2019 - 2024 (expected) Ph.D. in Computer Science, *Institute of Science and Technology Austria (ISTA)*
- Focus: Advancing the theory of quantitative and approximate monitoring
- Supervisor: Thomas A. Henzinger

2014 - 2019 B.Sc. in Computer Science and Engineering, *Sabancı University*
- Minor: Mathematics
- Rank: 1 / 544

Research Interests

- Runtime verification
- Formal methods
- Automata theory

Research Experience

2023 Research Intern, *Center for Digital Safety & Security at Austrian Institute of Technology (AIT)*
- Project: Approximate monitoring of distributed systems
- Conceptualize and implement an approximate distributed monitoring algorithm.

2020 Research Rotation Student, *Christoph Lampert Group at ISTA*
- Project: Simplified adversarial training
- Derived a simple optimization objective and implemented it in a new training method.

2018 - 2019 Graduation Project Student, *Sabancı University*
- Project: Blockchain-based marketplace for computational services
- Managed the group project for a year, developed and implemented a trustless protocol.

2017 Undergraduate Research Intern, *Thomas Henzinger Group at ISTA*
- Project: Infinite-state safety monitors
- Studied expressiveness of several automata models with integer-valued registers.

2017 - 2019 Undergraduate Research Assistant, *Sabancı University*
- Project: Synchronizing heuristics for finite-state automata
- Implemented novel heuristics for finding short synchronizing words faster.

Teaching Experience

2023 - now "Formalisms Every Computer Scientist Should Know" Teaching Assistant, *ISTA*

2023 "Foundations of Model Checking" Guest Lecturer, *ISTA*

2022 "Formal Methods" Teaching Assistant, *ISTA*

2018 - 2019 "Algorithms" Teaching Assistant, *Sabancı University*

2015 - 2018 "Mathematics & Natural Sciences" Peer Study & Workshop Moderator, *Sabancı University*

Academic Honors & Awards

2019 Highest Ranking Student (Sakıp Sabancı Award), *Sabancı University*

2018 Logic Mentoring Workshop Student Travel Grant, *ACM SIGLOG*

2017 Scholarship for Student Researchers, *Österreichischer Austauschdienst (OeAD)*

Professional Service

2020 - now Publication database maintainer for Thomas Henzinger Group at ISTA

2021, 2023 Reviewer for FSTTCS, ATVA, CONCUR, ISSE, Thomas Henzinger Festschrift

2023 Pre-screener for PhD applications at ISTA

Publications (*: authors ordered alphabetically)

2023 Safety and Liveness of Quantitative Automata
U. Boker, T. A. Henzinger, N. Mazzocchi, N. E. Saraç*
34th Intl. Conf. on Concurrency Theory (CONCUR)

2023 Regular Methods for Operator Precedence Languages
T. A. Henzinger, P. Kebis, N. Mazzocchi, N. E. Saraç*
50th Intl. Coll. on Automata, Languages, and Programming (ICALP)

2023 Quantitative Safety and Liveness
T. A. Henzinger, N. Mazzocchi, N. E. Saraç*
26th Intl. Conf. on Foundations of Software Science and Computation Structures (FoSSaCS)

2022 Abstract Monitors for Quantitative Specifications
T. A. Henzinger, N. Mazzocchi, N. E. Saraç*
22nd Intl. Conf. on Runtime Verification (RV)

2021 Quantitative and Approximate Monitoring
T. A. Henzinger, N. E. Saraç*
36th Ann. ACM/IEEE Symp. on Logic in Computer Science (LICS)

2021 Boosting Expensive Synchronizing Heuristics
N. E. Saraç, Ö. F. Altun, K. T. Atam, S. Karahoda, K. Kaya, H. Yenigün
Expert Systems with Applications (ESWA), Volume 167

2020 Monitorability Under Assumptions (invited paper)
T. A. Henzinger, N. E. Saraç*
20th Intl. Conf. on Runtime Verification (RV)

2018 A Theory of Register Monitors
T. Ferrère, T. A. Henzinger, N. E. Saraç*
33rd Ann. ACM/IEEE Symp. on Logic in Computer Science (LICS)

Scientific Talks

Safety and Liveness of Quantitative Properties and Automata
2023 • *AIT Dependable Systems Engineering Seminar Series*

Advancing the Theory of Quantitative Algorithmic Monitoring
2022 • *FBK Embedded Systems Seminar Series*
2022 • *It-Matters Seminar Series*

Quantitative and Approximate Monitoring
2021 • *ISTA & TU Wien FORSYTE Joint Seminar Series*

Monitorability Under Assumptions
2020 • *ISTA & TU Wien FORSYTE Joint Seminar Series*

Skills

- C/C++ (intermediate), Python (basic), OpenMP (basic), CUDA (basic), Solidity (basic)
- English (fluent), German (basic), Turkish (native)