

# N. Ege Saraç

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## Education

- 2019 - 2025 (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, *Sabanci 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, *Sabanci 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, *Sabanci 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, *Sabanci University*
- 2015 - 2018 "Mathematics & Natural Sciences" Peer Study & Workshop Moderator, *Sabanci University*

## Professional Service

- PC Member CAV'24 Artifact Evaluation
- Reviewer MFCS'24, FSTTCS'23, ATVA'23, CONCUR'23, Innovations in Systems and Software Engineering, Thomas Henzinger Festschrift
- Pre-screener PhD applications at ISTA (2023, 2024)
- Maintainer Publication database of Thomas Henzinger Group at ISTA (2020 - now)

## **Publications** (\*: authors ordered alphabetically)

- 2023     Safety and Liveness of Quantitative Automata  
U. Boker, T. A. Henzinger, N. Mazzocchi, N. E. Saraç\*  
*34<sup>th</sup> Intl. Conf. on Concurrency Theory (CONCUR)*
- 2023     Regular Methods for Operator Precedence Languages  
T. A. Henzinger, P. Kebis, N. Mazzocchi, N. E. Saraç\*  
*50<sup>th</sup> Intl. Coll. on Automata, Languages, and Programming (ICALP)*
- 2023     Quantitative Safety and Liveness  
T. A. Henzinger, N. Mazzocchi, N. E. Saraç\*  
*26<sup>th</sup> 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\*  
*22<sup>nd</sup> Intl. Conf. on Runtime Verification (RV)*
- 2021     Quantitative and Approximate Monitoring  
T. A. Henzinger, N. E. Saraç\*  
*36<sup>th</sup> 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\*  
*20<sup>th</sup> Intl. Conf. on Runtime Verification (RV)*
- 2018     A Theory of Register Monitors  
T. Ferrère, T. A. Henzinger, N. E. Saraç\*  
*33<sup>rd</sup> Ann. ACM/IEEE Symp. on Logic in Computer Science (LICS)*

## **Scientific Talks**

- 2023     Safety and Liveness of Quantitative Properties and Automata  
• [AIT Dependable Systems Engineering Seminar Series](#)
- 2022     Advancing the Theory of Quantitative Algorithmic Monitoring  
• [FBK Embedded Systems Seminar Series](#)
- 2022     • [It-Matters Seminar Series](#)
- 2021     Quantitative and Approximate Monitoring  
• *ISTA & TU Wien FORSYTE Joint Seminar Series*
- 2020     Monitorability Under Assumptions  
• *ISTA & TU Wien FORSYTE Joint Seminar Series*

## **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)*

## **Skills**

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