

## Education

- 2019–2025 **PhD** in Computer Science, *Institute of Science and Technology Austria (ISTA)*, Klosterneuburg  
Thesis: *A Monitoring-oriented Theory and Classification of Quantitative Specifications*  
Supervisor: [Thomas A. Henzinger](#)
- 2014–2019 **BSc** in Computer Science (Minor: Mathematics), *Sabancı University*, Istanbul  
Rank: 1st out of 544

## Employment

- 2025–now **Postdoctoral researcher**, *CISPA Helmholtz Center for Information Security*, Saarbrücken  
Supervisor: [Bernd Finkbeiner](#)

## Research Visits and Experience

- Jul-Oct 2023 *Austrian Institute of Technology (AIT)* with [Dejan Ničković](#)
- Jun-Sep 2017 *Institute of Science and Technology Austria (ISTA)* with [Thomas A. Henzinger](#)
- 2018–2019 *Sabancı University* with [Kamer Kaya](#) and [Hüsnü Yenigün](#)

## Awards and Recognition

- 2026 MSCA PF selected for funding with a score of 98.8% (~€202k), *European Commission*
- 2025 Research paper selected for post-conference journal special issue, *CONCUR 2025*
- 2025 Chosen as one of 24 participants from 10 Helmholtz Centers (~€2k), *COMPASS Mentoring Prog.*
- 2025 Shortlisted for the ISTA Outstanding PhD Thesis Award (awarded to top 8% of all theses), *ISTA*
- 2024 Research paper selected for post-conference journal special issue, *RV 2024*
- 2023 Research paper selected for post-conference journal special issue, *CONCUR 2023*
- 2019 Sakıp Sabancı Award for the Highest Ranking Student (~€10k), *Sabancı University*
- 2018 Logic Mentoring Workshop Student Travel Grant (~€500), *ACM SIGLOG*
- 2017 Scholarship for Student Researchers (~€3.5k), *Österreichischer Austauschdienst (OeAD)*
- 2014 Merit-based full scholarship for BSc studies (~€65k), *Sabancı University*

## Publications (\*: first or corresponding author)

- Summary 15 publications in total (13 conference + 2 journal)  
13 as a first or corresponding author, 3 selected for journal specials issues,  
and 2 papers co-authored with mentees

### Journal Articles

- [LMCS'25] **Safety and Liveness of Quantitative Properties and Automata.** Udi Boker, Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *Logical Methods in Computer Science*, Volume 21, Issue 2, 2025.
- [ESWA'21] **Boosting Expensive Synchronizing Heuristics.** N. Ege Saraç\*, Ö. Faruk Altun, K. Tolga Atam, Sertaç Karahoda, Kamer Kaya, Hüsnü Yenigün. *Expert Systems with Applications*, Volume 167, 2021.

### Conference Proceedings

- [FM'26] **Quantitative Monitoring of Signal First-Order Logic.** Marek Chalupa, Thomas A. Henzinger, N. Ege Saraç\*, Emily Yu. *27th Intl. Symp. on Formal Methods*, 2026.

- [CONCUR'25] **Quantitative Language Automata.** Thomas A. Henzinger, Pavol Kebis, Nicolas Mazzocchi, N. Ege Saraç\*. *36th Intl. Conf. on Concurrency Theory*, 2025. Selected for LMCS special issue.
- [TACAS'25] **Automating the Analysis of Quantitative Automata with QuAK.** Marek Chalupa, Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *31st Intl. Conf. on Tools and Algorithms for the Construction and Analysis of Systems*, 2025.
- [ISoLA'24] **QuAK: Quantitative Automata Kit** (invited). Marek Chalupa, Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *12th Intl. Symp. on Leveraging Applications of Formal Methods*, 2024.
- [RV'24] **Approximate Distributed Monitoring Under Partial Synchrony.** Borzoo Bonakdarpour, Anik Momtaz, Dejan Ničković, N. Ege Saraç\*. *24th Intl. Conf. on Runtime Verification*, 2024. Selected for STTT special issue.
- [CONCUR'24] **Strategic Dominance: A New Preorder for Nondeterministic Processes.** Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *35th Intl. Conf. on Concurrency Theory*, 2024.
- [CONCUR'23] **Safety and Liveness of Quantitative Automata.** Udi Boker, Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *34th Intl. Conf. on Concurrency Theory*, 2023. Selected for LMCS special issue.
- [ICALP'23] **Regular Methods for Operator Precedence Languages.** Thomas A. Henzinger, Pavol Kebis, Nicolas Mazzocchi, N. Ege Saraç. *50th Intl. Coll. on Automata, Languages and Programming*, 2023.
- [FoSSaCS'23] **Quantitative Safety and Liveness.** Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *26th Intl. Conf. on Foundations of Software Science and Computation Structures*, 2023.
- [RV'22] **Abstract Monitors for Quantitative Specifications.** Thomas A. Henzinger, Nicolas Mazzocchi, N. Ege Saraç\*. *22nd Intl. Conf. on Runtime Verification*, 2022.
- [LICS'21] **Quantitative and Approximate Monitoring.** Thomas A. Henzinger, N. Ege Saraç\*. *36th Ann. ACM/IEEE Symp. on Logic in Computer Science*, 2021.
- [RV'20] **Monitorability Under Assumptions** (invited). Thomas A. Henzinger, N. Ege Saraç\*. *20th Intl. Conf. on Runtime Verification*, 2020.
- [LICS'18] **A Theory of Register Monitors.** Thomas Ferrère, Thomas A. Henzinger, N. Ege Saraç. *33rd Ann. ACM/IEEE Symp. on Logic in Computer Science*, 2018.

## Scientific Talks

### Quantitative Language Automata

- Oct 2025 19th Intl. Conf. on Reachability Problems (RP)
- Aug 2025 36th Intl. Conf. on Concurrency Theory (CONCUR)

### Approximate Distributed Monitoring under Partial Synchrony

- Oct 2024 24th Intl. Conf. on Runtime Verification (RV)
- Oct 2024 AIT Dependable Systems Engineering Seminar Series

### Safety and Liveness of Quantitative Properties and Automata

- Mar 2025 RWTH Aachen Software Modeling and Verification Group Seminar Series
- Feb 2025 CISPA Reactive Systems Group Seminar Series
- Jan 2025 TU Dresden Algebraic and Logic Foundations of Computer Science Seminar Series
- Sep 2024 18th Intl. Conf. on Reachability Problems (RP)
- Sep 2024 TU Wien CPS Research Unit Seminar Series
- Sep 2024 16th Alpine Verification Meeting (AVM)
- Jun 2024 DEVINE Research Team (Inria and IRISA) Formal Methods Seminar
- Oct 2023 AIT Dependable Systems Engineering Seminar Series
- Apr 2023 26th Intl. Conf. on Foundations of Software Science and Computation Structures (FoSSaCS)

### Advancing the Theory of Quantitative Algorithmic Monitoring

- Sep 2022 FBK Embedded Systems Seminar Series
- Apr 2022 IMT Lucca It-Matters Seminar Series

## Quantitative and Approximate Monitoring

- Jul 2021 36th Ann. ACM/IEEE Symp. on Logic in Computer Science (LICS)  
Jun 2021 ISTA & TU Wien FORSYTE Joint Seminar Series

## Monitorability Under Assumptions

- Dec 2020 ISTA & TU Wien FORSYTE Joint Seminar Series

## Teaching Experience

- ISTA* **Formalisms Every Computer Scientist Should Know** (Teaching Assistant): Fall 2023  
**Foundations of Model Checking** (Guest Lecturer): Spring 2023  
**Formal Methods: Algorithmic Approaches** (Teaching Assistant): Spring 2022  
*Sabancı Univ.* **Algorithms** (Teaching Assistant): Fall 2018–Spring 2019  
**Mathematics & Natural Sciences** (Workshop & Study Moderator): Spring 2015–Spring 2018

## Mentoring Experience

### Mentored Students

- 2025 **Harun Yılmaz**, *ISTA*: Supervised a project for a conference submission  
2024, 2022 **Pavol Kebis**, *ISTA*: Co-authored two conference publications, one selected for special issue

### Additional Experience

- 2025 **Alumni Speaker** at the Graduate School Welcome Event, *ISTA*  
2023, 2020 **Student Mentor** for incoming PhD students, *ISTA*

## Professional Service

- Organizer HYPER 2026 Workshop (co-located with FLoC/CAV 2026)  
Program committee CONCUR 2026, VMCAI 2026 (AEC), CAV 2025 (AEC), CAV 2024 (AEC)  
Reviewer *Conferences*: CONCUR 2025, RV 2024 (x2), MFCS 2024, FSTTCS 2023, ATVA 2023, CONCUR 2023  
*Journals*: Innovations in Systems and Software Engineering  
*Books*: Principles of Systems Design (Thomas A. Henzinger Festschrift)  
Pre-screener for PhD applications, *ISTA* (2024, 2023)  
Maintainer of the publication database for the T. A. Henzinger Group, *ISTA* (2020–2025)  
PhD examining board Niklas Metzger (Feb 2026, Uds), Sebastian Schirmer (Feb 2026, Uds)

## Professional Development

- 2026–2027 COMPASS Mentoring Program, *Helmholtz Association*  
2025 ProLehre Onboarding – Effective Teaching, *TU Munich*  
2022 Basics in Didactics – Teaching and Learning in Higher Education, *ISTA*  
2019 Science Research Writing – A Technical Introduction, *ISTA*

## Open-Source Software

- 2025–now **QuAK**: C++ library and CLI tool for quantitative automata analysis and monitoring  
2023–2024 **ApxDistMon**: Prototype for novel approximate monitoring algorithms for distributed systems  
2019 **SyncBoost**: GPU-accelerated implementations of finite-automata synchronizing heuristics

## Miscellaneous

- Languages English (fluent), German (intermediate), Turkish (native)