Dóra Cziborová

PhD Student in Formal Verification

cziborova@mit.bme.hu
0009-0003-5624-1372

Education and Degrees

2024–present **Computer Science PhD**, *Doctoral School of Informatics, Budapest University of Technology and Economics*, research topic: Formal Verification of Real-time Software-based Systems.

2022–2024 **Computer Science Engineering MSc**, *Budapest University of Technology and Economics*, specialization in critical systems, graduated with highest honours, participant of the IMSc program.
Master's thesis: Abstraction-based Timed Model Checking for Software-intensive System Models

2018–2022 **Computer Science Engineering BSc**, *Budapest University of Technology and Economics*, graduated with highest honours, participant of the IMSc program.
Bachelor's thesis: Generalizing Lazy Abstraction Refinement Algorithms with Partial Orders

Skills

Languages Hungarian (native), English (advanced, C1), Slovak (advanced), German (passive)

Research formal methods, formal verification, model checking, timed systems, CEGAR, lazy abstraction

Development Java, Python, C, C++, Kotlin, C#, Git

Publications

2024 **Modeling of Time-Dependent Behavior in Fault-Tolerant Systems**, *Dóra Cziborová and Richárd Szabó*, 31st Minisymposium of the Department of Measurement and Information Systems of the Budapest University of Technology and Economics.

Students' Scientific Conference Papers

2023 **Abstraction-based Model Checking for Real-time Software-intensive System Models**, *Dóra Cziborová*, Students' Scientific Conference of the Faculty of Electrical Engineering and Informatics of the Budapest University of Technology and Economics.
1st prize

2022 **Abstraction-based Model Checking Techniques for Real-time Systems**, *Dóra Cziborová and Béla Ákos Vizi*, Students' Scientific Conference of the Faculty of Electrical Engineering and Informatics of the Budapest University of Technology and Economics.
2nd prize

Experience

2024 **16th Alpine Verification Meeting (AVM)**, *presentation: Abstraction-based Model Checking for Real-time Software-intensive System Models*.

2024 **ResilTech s.r.l., Italy**, *"Addressing Verification and Validation Challenges in Future Cyber-Physical Systems" (ADVANCE) H2020 RISE Research Project*.

2023 **15th Alpine Verification Meeting (AVM)**, *presentation: Combining CEGAR and Lazy Abstraction for Verifying Timed Systems*.

Open Source Contributions

2021–present **Theta**, *a generic, modular and configurable formal verification framework supporting various formalisms and algorithms (github.com/ftsrg/theta)*.

Teaching

2024 **Automated Verification Techniques**, *MSc course*, delivering lectures on SMT solvers.

2024–present **Software Engineering**, *BSc course*, delivering laboratory practices.

2023–present **Formal Methods**, *MSc course*, assembling and grading homework assignments, scoring exams, delivering lectures on model checking.

2023–present **Languages and Automata**, *MSc course*, scoring exams.

2020-2021 **Databases**, *BSc course*, delivering classroom practices, scoring exams.

2019 **Basics of Programming 1**, *BSc course*, delivering laboratory practices.