Mihai Nicola

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RESEARCH INTERESTS

My research aims to advance software reliability. In my work I apply formal methods to develop new techniques for reasoning about program correctness. I focus in particular on programming languages, automated verification, and concurrency.

EDUCATION

Stevens Institute of Technology   Hoboken, NJ
Ph.D. in Computer Science   *Sept 2021 - Present*

Politehnica University   Bucharest, Romania
M.S. in Computer Science   *Sept 2018 - Sept 2020*

Faculty of Cybernetics, ASE   Bucharest, Romania
B.S. in Economic Informatics   *Sept 2000 - Jun 2005*

PUBLICATIONS

Nicola, M., Agarwal, C., Koskinen, E., & Wies, T. (2025). Abstract Interpretation of Temporal Safety Effects of Higher Order Programs. Proceedings of the ACM on Programming Languages, 9(OOPSLA2), 2511-2539.

Chen, A., Fathololumi, P., **Nicola, M.**, Pincus, J., Brennan, T., & Koskinen, E. (2023, October). Better predicates and heuristics for improved commutativity synthesis. In International Symposium on Automated Technology for Verification and Analysis (pp. 93-113). Cham: Springer Nature Switzerland.

TEACHING EXPERIENCE

Teaching Assistant   Stevens Institute of Technology

Compiler Design. Spring 2024, Spring 2025
Concurrent Programming. Fall 2025

AWARDS & HONORS

Provost Doctoral Fellowship. Stevens Institute of Technology (2021)

TALKS

Automated Refinement of Concurrent Object Quotients. VDS 2025
Inferring Dependent Types and Effects through Abstract Interpretation NJPLS May 2024

PROFESSIONAL EXPERIENCE

Domain Software Architect   2019 – 2021
ING Bank   *Bucharest, Romania*

Design and validation of reliability-critical systems, focusing on correctness, and guiding development teams to ensure safety under availability constraints.

Consultant / Senior Software Engineer   2006-2019
United Nations Conference on Trade and Development   *Geneva, Switzerland*

Led the design and implementation of configurable, large-scale software systems for international trade and e-government platforms, deployed in more than 30 countries

Additional industry positions omitted for brevity and available upon request.