

Cezar-Constantin Andrici

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Education

- 10/2021-2026 **Ph.D. candidate** in Computer Science at **MPI-SP**, Germany
Subject: *Secure compilation of verified effectful F^* programs to ML*. Advised by Cătălin Hrițcu.
- 2019–2021 **M.Sc.** in Computer Science from **UAIC**, Romania
Thesis: *Enforcing trace properties on the interoperability between F^* and ML using hybrid verification*.
Advised by Ștefan Ciobâcă and Cătălin Hrițcu.
- 2019–2021 **M.A.** in Regional Development from **UAIC**, Romania
Thesis: *Governance, Resilience and Absorption of Structural and Cohesion Funds in Central and Eastern Europe: A Case Study*. Advised by Ramona Țigănașu.
- 2015–2019 **B.Sc.** in Computer Science from **UAIC**, Romania
Thesis: *Proving SAT Solving Algorithms and Data Structures in Dafny*. Advised by Ștefan Ciobâcă.

Publications

- Conferences **SecRef*: Securely sharing mutable references between verified and unverified code in F^*** . C.-C. Andrici, D. Ahman, C. Hrițcu, R. Ileanu, G. Martínez, E. Rivas, and T. Winterhalter. *ICFP*, 2025
- Securing verified IO programs against unverified code in F^*** . C.-C. Andrici, Ș. Ciobâcă, C. Hrițcu, G. Martínez, E. Rivas, É. Tanter, and T. Winterhalter. *POPL*, 2024
- Journals **A verified implementation of the DPLL algorithm in Dafny**. C.-C. Andrici and Ș. Ciobâcă. *Mathematics*, 2022
- Informal **Towards formally secure compilation of verified F^* programs against unverified ML contexts**, C.-C. Andrici, D. Ahman, C. Hrițcu, G. Martínez, A. Pribisova, E. Rivas, and T. Winterhalter. Submitted to PriSC, 2026
- Verifying non-terminating programs with IO in F^*** , C.-C. Andrici, T. Winterhalter, and C. Hrițcu. *HOPE*, 2022
- Partial Dijkstra Monads for all**, T. Winterhalter, C.-C. Andrici, C. Hrițcu, K. Maillard, G. Martínez, and E. Rivas. *TYPES*, 2022
- Gradual enforcement of IO trace properties (poster)**
🏆 1st prize at Student Research Competition of ICFP 2020 (graduates section)

Research projects

- 2023–2025 **SCIO*** and **SecRef*** are two verified secure compilation frameworks for verified IO/stateful F^* programs. The resulting compiled program is guaranteed to have the same *integrity*, *data confidentiality* and *code confidentiality* as in the source language when linked against adversarial unverified code. The frameworks are implemented and verified in F^* . I'm the lead author for both of them.
- 2022 **TrueSAT** is a SAT solver implemented in Dafny and verified to be sound, complete and terminate. It implements the DPLL algorithm. I'm the lead author.

Experience

- 02/2020-07/2021 **Research intern** at **UAIC**, advised by Ștefan Ciobâcă
- 07-10/2020 **Research intern** at **MPI-SP** in the FOVSEC group, advised by C. Hrițcu
- 07-11/2019 **Research intern** at **Inria Paris** in the Prosecco team, advised by C. Hrițcu and E. Rivas
- 12/2017-06/2019 **System Administrator** at **UAIC**, Romania
- 11/2015-11/2017 **CTO** at **CTF365** (Cyber security start-up), Romania
- 07-10/2015 **Software Development Intern** at **Amazon Development Center**, Romania

Skills

P. Languages Wrote professional software in F^{*}, Dafny, Rocq, OCaml, C++, JavaScript, Ruby, SQL, PHP.
Other languages include Python, Haskell, Solidity and C#.

Languages Romanian (native), English (proficient), German (beginner)

Teaching Assistant

2024 Fall Proofs are Programs, Graduate level course, RUB, Germany

2023 Summer Functional Programming, Undergraduate level course, RUB, Germany

2020 Fall Logics in Computer Science, Undergraduate level course, UAIC, Romania

Community Service

Sub-reviewer CPP'26, ICFP'25, POPL'24, SP'2021

AEC Member POPL'26, POPL'23

Student volunteer POPL'24, POPL'23, ICFP'22, PLDI'20, POPL'20, ETAPS'19, FROM'18