Cezar-Constantin Andrici

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Education

10/2021-09/2026 **Ph.D. candidate** in Computer Science at **MPI-SP**, Germany
Subject: *Secure compilation of verified effectful F⋆ programs to ML*. Advised by Cătălin Hriţcu.

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 Ştefan Ciobâcă and Cătălin Hriţcu.

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 Ţigănaşu.

2015–2019 **B.Sc.** in Computer Science from **UAIC**, Romania
Thesis: *Proving SAT Solving Algorithms and Data Structures in Dafny.* Advised by Ştefan Ciobâcă.

Publications

Conferences **SecRef⋆: Securely sharing mutable references between verified and unverified code in F⋆**. C.-C. Andrici, D. Ahman, C. Hriţcu, R. Icleanu, G. Martínez, E. Rivas, and T. Winterhalter. *ICFP*, 2025

Securing verified IO programs against unverified code in F⋆. C.-C. Andrici, Ş. Ciobâcă, C. Hriţcu, 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 Ş. Ciobâcă. *Mathematics*, 2022

Informal **Verifying non-terminating programs with IO in F⋆**, C.-C. Andrici, T. Winterhalter, and C. Hriţcu. HOPE, 2022

Partial Dijkstra Monads for all, T. Winterhalter, C.-C. Andrici, C. Hriţcu, 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 Ştefan Ciobâcă
07-10/2020 **Research intern** at **MPI-SP** in the FOVSEC group, advised by C. Hriţcu
07-11/2019 **Research intern** at **Inria Paris** in the Prosecco team, advised by C. Hriţcu and E. Rivas
12/2017-06/2019 **System Administrator** at **UAIC**, Romania
11/2015-11/2017 **CTO** at **CTF365** (Cybersecurity 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	ICFP'25, POPL'24, SP'2021
AEC Member	POPL'23
Student volunter	POPL'24, POPL'23, ICFP'22, PLDI'20, POPL'20, ETAPS'19, FROM'18