Cezar-Constantin Andrici

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1 Education

Ph.D. at Max Planck Institute for Security and Privacy, Bochum, Germany (Oct 2021 -)
Ph.D. in Computer Science under the supervision of Cătălin Hrițcu on the subject of
Secure interoperability between F⋆ and ML.

M.Sc. in Computer Science from FII @ UAIC, Iași, Romania (Oct 2019 to July 2021)

MA in Regional Development from CSE @ UAIC, Iași, Romania (Oct 2019 to July 2021)
Interdisciplinary master in european law, economics, governance and policies.

B.Sc. in Computer Science from FII @ UAIC, Iași, Romania (Oct 2015 to July 2019)

2 Publications

1. **Secure Compilation of F⋆ Programs with IO Against Linked Weakly-Typed Code (Extended Abstract).** *Cezar-Constantin Andrici*, Cătălin Hrițcu and Théo Winterhalter.

2. **Verifying non-terminating programs with IO in F⋆ (Extended Abstract)**. *Cezar-Constantin Andrici*, Théo Winterhalter, Cătălin Hrițcu and Exequiel Rivas. At the 10th ACM SIGPLAN Workshop on Higher-Order Programming with Effects (HOPE 2022). slides, video

3. **Partial Dijkstra Monads for All (Extended Abstract)**. Théo Winterhalter, *Cezar-Constantin Andrici*, Cătălin Hrițcu, Kenji Maillard, Guido Martínez and Exequiel Rivas. At the 28th International Conference on Types for Proofs and Programs (TYPES 2022).

4. **Who Verifies the Verifiers? A Computer-Checked Implementation of the DPLL Algorithm in Dafny.** *Cezar-Constantin Andrici* and Ștefan Ciobâcă. In *Mathematics 2022*, 10(13), 2264.

5. **Gradual Enforcement of IO Trace Properties (Extended Abstract)**. Cezar-Constantin Andrici. At the 25th ACM SIGPLAN International Conference on Functional Programming - Student Research Competition (ICFP 2020 SRC). Advisors: Ștefan Ciobâcă, Cătălin Hrițcu, Guido Martínez, Exequiel Rivas, Éric Tanter. Poster, video

6. **Verifying the DPLL Algorithm in Dafny.** Cezar-Constantin Andrici and Ștefan Ciobâcă. In *Working Formal Methods Symposium 2019* (FROM 2019) EPTCS 303, 2019, pages 3–15.

3 Positions

Research intern at [UAIC](#), Iași (from Feb 2020 to Jun and from Nov to Jul 2021)
➢ Research on secure $F^\star$-ML interoperability for input-output programs.
➢ Under the supervision of [Ștefan Ciobâcă](#)

Research intern at [MPI-SP](#), Bochum, Germany (Jul 2020 to Oct 2020)
➢ Research on secure $F^\star$-ML interoperability for input-output programs.
➢ Under the supervision of [Cătălin Hriţcu](#)

Research intern at [Inria Paris](#), France (Jul 2019 to Nov 2019)
➢ Conducted a case study on using Dijkstra Monads in the $F^\star$ language to verify trace properties of a stateless and terminating web-server.
➢ Under the supervision of [Cătălin Hriţcu](#) and [Exequiel Rivas](#)

IT Specialist / Research intern at [UAIC](#), Iași, Romania (Dec 2017 to June 2019)
➢ Implemented a DPLL Solver in Dafny and published the results.
➢ Built a new main website for the Faculty of Computer Science.

Full Stack Developer and Team Leader at CTF365, Cluj (Nov 2015 to Nov 2017)
➢ CTF365 was a security startup - the main product was a security training platform that attracted several Fortune 500 companies as clients.
➢ Coordinated the technical team, created software solutions, managed full life-cycle software development, performed technical analysis and testing, led technical collaboration, and wrote technical documentation.
➢ Obtained a pre-seed round of investment from [hub:raum -Tech Incubator of Deutsche Telekom](#) after participating at a 5-week program in Krakow, Poland.

Software Development Intern at [Amazon Development Center](#) (Jul 2015 to Oct 2015)

4 Awards & Grants

1st prize at Student Research Competition, graduates section, at the 25th ACM SIGPLAN International Conference on Functional Programming (ICFP 2020) with submission: Gradual Enforcement of IO Trace Properties.

Travel grant to participate in VMCAI Winter School, New Orleans, 2020.

Scientific performance scholarship from [UAIC](#), Iași, Romania. The scholarship was for 12 months and it is competitively awarded.

During highschool, I **participated in the National Computer Science Olympiad** in Romania in 2008, 2009, 2011 and 2012. Ranked top 15 every year. Also, participated at the National Computer Science Olympiad from Bulgaria in 2009.

Numerous awards at contests of IT&C projects ([InfoEducaţie](#)), at local hackathons and at events of entrepreneurship ([Startup weekend](#)).

Travel grants for *Leonardo da Vinci Lifelong Learning Programme*, Germany, Karlsruhe, 2012 and *Euroscola Programme*, France, Strasburg, 2014. The travel grants were competitively awarded.

5 Presentations

- **Gradual Enforcement of IO Trace Properties** at Student Research Competition, 25th ACM SIGPLAN International Conference on Functional Programming (ICFP 2020), online (Aug 2020) - video.
- **Verification of IO behavior of programs in F⋆** at Faculty of Computer Science Seminar, Iași (Jan 2020).

6 Community Service

Sub-reviewer at

- 42nd IEEE Symposium on Security and Privacy

Committee Member in Artifact Evaluation Committee at:

- 50th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2023)

Student Volunteer at

- 27th ACM SIGPLAN International Conference on Functional Programming (ICFP 2022);
- 41st ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2020);
- 47th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2020);
- European Joint Conferences on Theory and Practice of Software (ETAPS 2019);
- Working Formal Methods Symposium (FROM 2018).

Judge in the national committee for the National Contest InfoEducație for pupils between 2016 and 2020, Romania. (pupils develop and present web or mobile apps)

7 Teaching

- Informally helped tutor students in **Logics in Computer Science** undergraduate course, 2020, UAIC, Iași.

8 Attended Summer Schools

- The Cornell, Maryland, Max Planck Pre-doctoral Research School 2020 (online)
- Verification, Model Checking, and Abstract Interpretation (VMCAI) Winter School 2020 (USA, New Orleans)
- POPL Programming Languages Mentoring Workshop 2020 (USA, New Orleans)

- [ETAPS Mentoring Workshop 2019 (Czech Republic, Prague)](#)
- ICUB - Coq Autumn School 2018 (Romania, Bucharest)

9 Skills

Strong algorithmic and problem solving background. A knack and love for problem solving and theoretical challenges. Ability to quickly research and learn new concepts. Can work efficiently in a team.

Knowledgeable with VIM, Emacs, Linux based platforms, code versioning tools, Docker and Cloud Services.

Proficient in F*, Dafny, JavaScript, C/C++ and SQL. Knowledgeable with Solidity, Haskell, Python, Coq, Ruby and Java.

10 Languages

Romanian (Native), **English** (Proficient user, IELTS - Overall 7.5), **German** (beginner)

11 References

Ștefan Ciobâcă   Associate Professor at [UAIC](#), Iași, Romania - stefan.ciobaca@gmail.com

Cătălin Hrițcu   Tenured faculty at [MPI-SP](#), Bochum, Germany - catalin.hritcu@mpi-sp.org

Éric Tanter   Full Professor at [University of Chile](#) - etanter@dcc.uchile.cl