

Work

Static Code Analysis Developer, Sonar – May 2024-April 2025

Redesigned the dataflow bug detection engine, resulting in 2x the true positive rate and 1/5th the false detection rate on internal Java & Python benchmarks without degrading performance.

Research Intern, Microsoft Research Redmond – Summer 2023

Designed a high-level language to model optimization problems and associated heuristics.

Co-Instructor / Head TA, EPFL Software Engineering course – 2018-23

Redesigned the course material to be interactive and focused on problem-solving.

Lectured for half of the course for ~150 students per year leading a team of ~10 assistants.

Software Developer, PocketCampus – 2014-18

Ported the official EPFL app to Windows Phone in C#, with ~300 daily users.

Implemented parts of the backend in Java, with ~10,000 daily users across platforms.

Selected Publications

Safe Low-Level Code Without Overhead is Practical

S. Pirelli, G. Candea. ICSE 2023.

Automated Verification of Network Function Binaries

S. Pirelli, A. Valentukonytė, K. Argyraki, G. Candea. NSDI 2022.

A Simpler and Faster NIC Driver Model for Network Functions

S. Pirelli, G. Candea. OSDI 2020.

A Formally Verified NAT

A. Zaostrovnykh, S. Pirelli, L. Pedrosa, K. Argyraki, G. Candea. SIGCOMM 2017.

Education

PhD in Computer Science, EPFL – 2024

"Automated Formal Verification of Software Network Functions", advised by George Candea.

Designed new verification techniques and implemented them in C#, Python, and C/C++.

Master's & Bachelor's in Computer Science, EPFL – 2018 & 2015

GPA: 5.6/6 and 5.2/6.

Responsibilities

Artifact Evaluator, Computer Systems Conferences – 2021-22

Co-chair for EuroSys 2022, leading 65 evaluators to evaluate 30 artifacts.

Evaluator for OSDI 2020-21, EuroSys 2021, and SOSP 2021.

President, LauzHack association – 2021-23

Led a team of ~15 volunteers organizing LauzHack, the yearly student-run hackathon at EPFL, for ~300 Swiss and European attendees. Founding member of the event from 2016 onwards.

President, PolyProg association – 2016-19

Led a team of ~15 volunteers organizing the yearly Helvetic Coding Contest, Switzerland's largest ICPC-style programming competition, for ~200 attendees.

Awards

Distinguished Service Award, EPFL IC Faculty – 2023

For exceptional contributions to the PhD program.

Teaching Assistant Award, EPFL IC Faculty – 2015, 2016, 2021

For outstanding work in the Software Engineering course.

Best Paper Award, SIGCOMM KBNets Workshop – 2018

For "A Formally Verified NAT Stack" with A. Zaostrovnykh and G. Candea.

Languages

French, native

English, fluent