Solal Pirelli

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solalpirelli.github.io

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. Used Agile development methods and tools such as JIRA and Trello.

Co-Instructor, EPFL – 2022-23
Redesigned the Software Engineering course to use evidence-based teaching methods. Lectured half of the course for ~150 students per year leading a team of ~10 assistants. Previously head TA for the course from 2018-21.

Research Intern, Microsoft Research Redmond – Summer 2023
Designed a domain-specific language in C# to model optimization problems and heuristics. Enabled domain modelers to write simpler and more transparent models that get solved faster.

Software Developer, PocketCampus – 2014-18
Ported the official EPFL app to Windows Phone in C# using Visual Studio, with ~300 daily users. Implemented the backend in Java with IntelliJ, 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.

Service

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.

Artifact Evaluation Chair, Computer Systems Conferences – 2022, 2026
Co-chair for EuroSys 2022, leading 65 evaluators. Co-chair for SOSP 2026. Also volunteered as artifact evaluator for OSDI 2020-21, EuroSys 2021, and SOSP 2021.

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.

Languages

French, native   **English**, fluent