

Antoine Martin

Software Engineer and Researcher

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Experience

- Oct 2021 – Jan 2026 **PhD Candidate, LRE**, EPITA Research Laboratory, Paris, France
As a member of the Automata and Applications group, I work on efficient algorithms and tools for formal methods and model checking.
 - Design and implementation of state of the art, parallel algorithms for automata construction, transformation, and model checking in Spot, a modern, high-performance **C++17** library
 - Performance optimization and benchmarking
 - Implement compiler passes in go2pins, interfacing Go programs with model checking tools
 - Published and presented my work in international conferences and journals (4 publications, including **1 best paper award**)
- Sep – Oct 2021 **Summer of Nix participant**, NixOS Foundation
Selected to participate in the Summer of Nix program, packaging free software while learning about the Nix ecosystem.
- Feb 2021 – Jul 2021 **Software Engineering Intern**, DGEX Solutions, SNCF Réseau
Working on interactive, cross-platform visualization of LIDAR point cloud data
 - Prototyped a **Rust/WebGPU** client
 - Built a proof-of-concept **C++/OpenGL** video renderer for non-interactive use cases
- Sep 2019 – Dec 2019 **Image Processing Software Intern**, Langevin Institute, CNRS UMR 7587
Development of medical image processing software for retina Doppler imaging
 - Implementation of high throughput GPU algorithms for real time imaging using **CUDA**, CuFFT, CuBLAS and CuSOLVER
 - User interface in **C++/Qt**, designed in collaboration with hospital physicians
 - Ported the project's build system from Visual Studio / MSBuild to CMake, bringing project build times down by a factor of 3.
- Sep 2018 – Jan 2021 **Teaching Assistant**, EPITA
Taught **C++**, Java, **C** and Unix to third year students, OCaml and .NET to first year students.
 - Contributions to the internal tooling codebase
 - Designed coding exercises for workshops and exams
 - Lead the organization of a three weeks workshop to teach C and Unix programming
- Aug 2017 – Mar 2019 **Junior Software Developer**, Okkur Labs, Part time, remote
Built TXTDirect, backend software for DNS record based redirects, written in Go and serving up to 400k daily requests

Education

- 2021 – 2026 **PhD, Computer Science**, Sorbonne Université, Paris
On-the-fly Translation of Industrial Temporal Logics to ω -Automata
Thesis advisors: Alexandre Duret-Lutz, Etienne Renault
Successfully defended on 27/01/2026.
- 2016 – 2021 **Engineering Degree, Computer Science**, EPITA
Majored in Image Processing and Computer Graphics
- 2018 **Exchange Student**, Computer Science, City University of Hong Kong

Extra curricular activities

- Notable Open Source contributions**
 - Minor contributions to the **Rust compiler**
 - Contributions to the Jujutsu Version Control System
- 2018 – Present **Member**, Prologin, <https://prologin.org>
 - Help organize the French National Programming Contest
 - Redaction of algorithmic problems and written exams
 - Part of the sysadmin team for the 2022 contest edition
 - Help organize the *Girls Can Code!* programming summer school workshops
 - Contributions to internal tooling and website code base (mostly Python, Django)

Programming skills

- Technologies Docker, GitLab CI/CD, Nix, Django
Languages Rust, C++, C, Go, Python, R, CUDA