

Antonin Carette

Senior Software Engineer

Personal Details

Date Of Birth 10th of September, 1990
Languages French, English
Children 1

Education

- 2017 **Assistant professor, University of Luxembourg, Luxembourg.**
Data Science and Mathematics courses for bachelor students.
- 2014–2016 **Master Degree, University of Lille, France.**
Computer Science, 'Optimization Algorithms and Artificial Intelligence'.
Magna cum laude.
- 2012–2014 **Bachelor Degree, University of Lille, France.**
Computer Science.
Cum laude.

Work Experience

- 2025 **Senior Software Systems Architect, Thales Alenia Space, Luxembourg.**
Memory safe languages and best coding practices for the Edge. High-security and high-performance on very low-profile and energy-efficient devices. Lead chapter of Systems Engineering.
- 2024–2025 **Head of Research & Development, Red Art Games, France.**
Leads a team of engineers to build emulators, and port of old games (MS-Dos games) on modern video game consoles.
- 2022–2025 **Senior Software Developer, Red Art Games, France.**
Game engine ports (V3X, Adventure Game Studio, Heaps, ...) from PC to modern video game consoles (Sony PlayStation 4 & PlayStation 5, Microsoft Xbox One & Series, and Nintendo Switch). Strong reverse engineering skills, knowledge of (de)compilers, and strong high-level and low-level software optimization skills.
Programming environment: C 11, C++ 14/17, use of native graphics APIs (DirectX 12, Vulkan, NVN, GNM, GNMP).
- 2021–2022 **Senior Software Developer, DernierCri, France.**
Various subjects & projects (from basic mobile apps to ML algorithms deployment), for startups and SMEs. Managed a small team of both back-end and front-end developers to deliver those projects under strong time constraints.
Programming environment: Go, TypeScript, JavaScript, Rust.

Phone number on demand – Meurthe-et-Moselle, France

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- 2021 **R&D Engineer, DataThings, Luxembourg.**
Various AI/ML solutions (using NLP techniques and CNNs) for SMEs, from proof-of-concepts to ready-for-production products, using real-world datasets constraints (small datasets, biased datasets, ...).
Programming environment: Python, C 11, C++ 14/17.
- 2018–2021 **Software Developer, TadaWeb, Luxembourg.**
Back-end services for both the core and AI / ML teams, from proof of concept to ready-to-production products. Production-level code to be deployed on TadaWeb's cloud stack, using SCRUM principles. Helped to benchmark AI software products from famous cloud providers (Microsoft Azure, Google Cloud, ...).
Programming environment: Python, Go, Rust, C++.
- 2016–2018 **Data Scientist and Software Developer, DernierCri, France.**
Data Science activities for SMEs and back-end services for startups.
Programming environment: Python, Rust, C++.
- Research projects**
- 2016–2017 **Assess and evaluating the energy consumption of Android apps code smells, LATECE team, UQÀM, Montréal.**
Built a strong protocol to measure the energy consumption of Android devices, to assess the impact of code smells on smartphones and Real-Time Operating-Systems (RTOS). The research paper has been submitted and accepted at **SANER 2017**.
Programming environment: Python, Rust, Java (for Android).
- 2015 **Prediction of bugs propagation for big Java projects, SequeL team, INRIA Lille, France.**
Built and experimented an automated method to study and predict bugs impacts in big Java projects. The research paper has been submitted and accepted at **RAISE 2016**.
Programming environment: Python.

Publications

- 2017 **Mastering Rust: Advanced concurrency, macros, and safe database, Packt Edition**, by Vesa Kaihlavirta.
Lead Reviewer.
- 2017 **Investigating the energy impact of Android smells, SANER 2017**, by Antonin Carette, Mehdi Adel Ait Younes, Geoffrey Hecht, Naouel Moha, and Romain Rouvoy.
First author.
- 2016 **A Learning Algorithm for Change Impact Prediction: Experimentation on 7 Java Applications, RAISE 2016**, by Vincenzo Musco, Antonin Carette, Martin Monperrus, and Philippe Preux.
Second author.

Skills

- I like to work with **cross-functional teams**.
- I am able to **organize my time** and **communicate efficiently**.
- I am able to **work easily in team and lead a project**, from POC to RTP products, through my involvement in open-source projects.

- I have both **good computer handling and programming skills** which I acquired contributing to open-source projects, but also during my work experience.
- I have **problem solving skills** and I like to solve concrete and real-world problems.
- I worked on **low end hardware and platforms**, used strong debugging techniques and developed an optimization mindset.

IT Package

Engineering:

- I program in **Go, Rust, C/C++**, and **Python**.
- I debug my programs using a CPU and / or GPU debugger, and I usually profile my programs to find bottlenecks and improve software performances (speed, memory, ...).
- I have the habit to take care of my projects from proof-of-concepts to production, including **Docker** containers deployment in cloud environments and **Gitlab CI/CD**.
- I have knowledge of message broker tools, like **RabbitMQ**.

Open-Source contributions

- **Machine Learning**: scikit-learn documentation, statsmodel.
- **The Rust community**: cargo-generate, Redox-OS, ar-OS (my own operating system written in Rust), the Rust compiler documentation.
- **Video Games**: ScummVM, SDL2.
- **Other**: FirefoxOS Powertool, SOMCA's Paprika tool, SOMCA's Naga Viper, Calabash.

Languages

French **Mothertongue**
English **Advanced**

Personal Interests

- Video game engineering
- Doom 3 (I can easily hold a conversation about Id Software and the development of Doom, Doom 3, and Quake for, at least, three decades)
- Photography, and cinematography
- Fencing