Antonin Carette

Game Engine Programmer

Personal Details

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

Education

2017 **Assistant professor**, *Assistant professeur*, **University of Luxembourg**, *Luxembourg*.
I teached and evaluated bachelor students in Big Data and Artificial Intelligence courses

2014–2016 **Master Degree of Computer Science**, *Master en Informatique*, **University of Lille**, *France*.
Specialisation: Optimization Algorithms and Artificial Intelligence

2012–2014 **Bachelor Degree of Computer Science**, *Licence Informatique*, **University of Lille**, *France*.

Work Experience

2022–... **Game Engine Programmer**, **Red Art Games**, *France*.
I do primarily game engine ports (V3X, Adventure Game Studio, ...) from the PC to modern video game consoles (Sony PlayStation 4 and Sony PlayStation 5, Microsoft Xbox One family and Xbox Series family, and Nintendo Switch), and then port and publish video games from those engines.
Programming environment: C 11, C++ 14/17, use of native graphics APIs (DirectX 12, Vulkan, NVN, GNM, GNMP).

2021–2022 **Full Stack Developer**, **DernierCri**, *France*.
I wrote production-level code for multiple projects from startups and large companies.
Programming environment: TypeScript, JavaScript, Elixir.

2021 **R&D Engineer**, **DataThings**, *Luxembourg*.
I helped to develop solutions for companies using artificial intelligence algorithms, from proof-of-concepts to production services. I wrote production-level code to integrate and deploy our solutions, as binaries or micro-services, in client's code base or cloud provider(s).
Programming environment: Python, C, C++.

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2018–2021 **Software Engineer**, **TadaWeb**, *Luxembourg*.

I helped to develop tools and solutions for both the Core and Machine Learning teams, from proof-of-concepts to production services. I wrote production-level code to deploy on our own cloud stack, for clients all over the world, using SCRUM principles. I also helped in testing some AI sofware products from Microsoft Azure, like *Computer Vision* and *Video Indexer*.

Programming environment: Python, Go, Rust, C++.

2016–2018 **Data Scientist and Software Developer**, **DernierCri**, *France*.

I conducted Data Science activities for many companies, and developed web and mobile apps using Django, React, and React-Native.

Programming environment: Python, Rust, React, React-Native.

Research projects

2016-2017 **Assess and evaluating the energy consumption of Android apps code smells**, *LATECE team*, UQÀM, Montréal.

I built a strong protocol to measure the energy consumption of an Android device, in order to evaluate code smells impact. I contributed to the tool "FirefoxOS Powertool" and wrote, as first author, a research paper about the method I developed. The research paper has been submitted and accepted at **SANER 2017** after peer review.

Programming environment: Python, Rust, Java (for Android).

2015 **Prediction of bugs propagation for big Java projects**, *SequeL team*, INRIA Lille, France.

I built and experimented a method to study and predict the prediction of bugs in big Java projects. We submitted a paper (second author) to **RAISE**, which has been accepted in 2016 after revision.

Programming environment: Python.

Games

Porting developer

2022 **OmegaBot**, *by Simon Carny*, edited and ported by RedArtGames, Porting developer.

OmegaBot is a challenging 2D platformer game made by Simon Carny, developed with GameMaker Studio 2. I adapted the game for consoles release (asynchronous saves, PS5 activities, controller supports, etc.), and fixed all bugs that have been reported by the internal QA team and the PC players.

Ports: Xbox One, Xbox Series, PS4, PS5, and Nintendo Switch.

2023 **V3X and Shinorubi**, *by LastBoss88*, edited and ported by RedArtGames, Porting developer.

Shinorubi is a bullet-hell SHMUP inspired by classical Japanese arcade games. Developed using a C++(17) game engine called *V3X*, I ported both the game and the game engine. I adapted the game for consoles, and fixed all performance issues thanks to a wide variety of CPU / GPU debuggers and profilers.

Ports: Xbox One (**DX12**), Xbox Series (**DX12**), PS4 (**GNM**), PS5 (**GNMP**), and Nintendo Switch (**NVN**).

2023 **SDL2**, Porting developer.

SDL2 is an open-source cross-platform development library for games. I port the library for both PS4 (**GNM**) and PS5 (**AGC**).

2023-2024 **Adventure Game Studio and *Unannounced project***, *by* **_**, edited and ported by RedArtGames, Porting developer.
An unannounced game, created with *Adventure Game Studio*.
Ports: Xbox One, Xbox Series, PS4, PS5, and Nintendo Switch.

Other / Credited

2022 **Sophstar**, edited and ported by RedArtGames, In porting developers team.

2022 **8 Doors**, edited and ported by RedArtGames, In porting developers team.

2022 **Heidelberg 1693**, edited and ported by RedArtGames, In porting developers team.

2023 **Skautfold: Usurper**, edited and ported by RedArtGames, In porting developers team.

2023 **Nuclear Blaze**, edited and ported by RedArtGames, In porting developers team.

2023 **Vernal Edge**, edited and ported by RedArtGames, In porting developers team.

2023 **Revita**, edited and ported by RedArtGames, In porting developers team.

2023 **Kung Fury: Street Rage - Ultimate Edition**, edited and ported by RedArtGames, In porting developers team.

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.

Personal Skills

- As I worked a lot with both research teams and companies, I am able to **organize my time** and **communicate efficiently**.
- I am able to **work easily in team and lead a project**, from a POC to production, through my involvement in open-source projects since I was a teenager.
- 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.

IT Package

Engineering:

- I am proficient in using **Python** (>= 3.7), **Go**, **Rust**, and **C/C++**, which I used during many personal and professional projects.

- I am efficient in using a CPU and GPU debugger and debug my projects, but also use CPU and GPU profilers as soon as I can in order to find some bottlenecks and improve performances of my softwares.
- I have knowledge of **Swift 5** / **SwiftUI** and the **Apple Metal 2** Graphics API for iOS, iPadOS, and macOS platforms, which I use to build my own game engine called *Frame*.
- I have knowledge of **OCaml** (functional paradigm only), which I studied during my first years at the University.
- 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**.

Games:

- I use GameMaker Studio 2 and Pico-8 as much as possible to prototype my ideas.

Open-Source contributions

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

Languages

French **Mothertongue**

English **Advanced**

Personal Interests

- Video game (and 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