

Maxime Capuano

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Website: malkaviel.github.io/particle/

Education

Professional bachelor degree 2018 - 2019

- Puy-en-Velay IUT, France.
- Academic interests: Medical imaging, 3D mathematics, algorithms and programming.
- Developed a MRI visualization software with the Unity Game Engine and the Microsoft Hololens, to display and manipulate MRI images on top of patients in real-time.

DUT 2015 - 2017

- Puy-en-Velay IUT, France.
- Academic interests: General computer science knowledge, C++ and C# programming, 3D mathematics and algorithms, game development.
- Developed a complete 2D game with the Unity Game Engine with a group of 14 students.
- Reworked the Puy-en-Velay IUT's website.

Business Experience

OpenStudio

2018 – 2019

Back-end Web Developer (Apprenticeship)

- Puy-en-Velay, France.
- Helped at the development of new functionalities, correction of bugs, and refactoring of the back-end framework and plugins used by OpenStudio.
- Worked on the introduction of automating tools and debugging tools in the development process, in order to automatically test the websites functionalities, make their deployment easier and make the development and debugging of projects easier and faster.

FB Digital

2017

Back-end Web Developer (Internship)

- Brioude, France.
- At first, assisted the lead developer with small tasks, in order to gain experience with the tools used by FB Digital (PHP, Symfony web framework, Thelia e-commerce framework).
- Later, worked as the lead developer on an e-commerce project, implementing most back-end functionalities.

Personal Projects

The Forgotten Ark

2017

- A first person shooter arena in a sci-fi universe, where the player can select its archetype to fit its play-style.
- A game prototype made with Unreal Engine 4.

Maskerad Game Engine

2018

- An open-source game engine written in Rust.
- Game engine prototype, to understand the architecture and functionalities of game engines.
- Mostly inspired by the Bitsquid Game Engine, made by Fatshark Game Studio, and the game Quake, made by Id Software and John Carmack.

Programming Expertise

Programming languages and paradigms

- Acquainted to the imperative paradigm, where a program is constructed as a series of steps to be performed. Most steps are statements, functions that don't return values, which have an effect on the state of the software, like mutating the value of a variable or printing text on the screen.
- Acquainted to the object-oriented paradigm, where programs are constructed with multiple objects that encapsulate their own state and keep it consistent. Those objects provide a public interface, or a way to receive messages, that other objects can use in order to mutate the state of the object in a controlled and simple manner.
- Acquainted to the functional paradigm, where programs are made of immutable data, calculated most of the time by "pure" functions, which operate only on the data passed as input. This paradigm express solutions as data, computations and effects, and those

components are clearly separated from each other. Each component can be composed with himself or another component, and computations can be treated as data, which make this paradigm extremely powerful to build abstractions in a simple and expressive manner.

- Experienced with a variety of programming languages: C, Unix Shell, C++, C#, Java, PHP, Lua, Python, Racket, Ocaml, F#, Haskell, Kotlin, Elixir, Rust...

Development methodologies

- Domain-driven design, with functional languages like F# and Ocaml.
- Test-driven design, with most languages, especially with dynamically typed languages like Python, Lua, PHP and Racket, since statically typed languages provide types which act as living documentation and compile-time tests.
- Agile methodologies, like Scrum and Extreme Programming, through various internships and apprenticeships.