

# Marco Maida

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I have extensive experience in designing and implementing systems that solve complex problems at scale.  
I have more than **ten years of professional expertise**, primarily writing **C++, Rust, C, Python, C#, and Coq**.  
I am currently based in **London**.

## Professional Experience

- Since 2022 **Software engineer – Robotics and AI.** Wayve Ltd  
I designed, implemented, and maintained several key systems of the on-board software stack of Wayve's autonomous cars. The software collects frames from different sensors; aligns, packages, and uploads enormous amounts of data, and runs a neural network for real-time inference. (*ROS2, Linux Kernel, C++, Rust, Python*).
- 2016-2019 **Software Engineer – Videogames.** 34BigThings  
I contributed to five major titles, designing and implementing game infrastructure, AIs, gameplays, and dev tools. I worked on single-player and online-multiplayer games shipped on Steam, PS4, XboxOne, Switch, and mobiles. (*Unity3D, C# and Unreal Engine, C++*)
- 2015-2016 **Software Engineer – Videogames, Simulation** Maserati, Teoresi, Choralia  
This experience groups two freelance B2B projects. First, I built an educational game for mobiles and browsers. I led the project end-to-end, managing one artist I hired. Second, I collaborated with an engineer and an artist to create a 3D visualization tool used for product presentation. (*C#, Javascript*)
- 2013-2016 **Software Engineer – Industrial Software.** R.O. srl  
I designed and maintained a suite of software solutions for glass processing factories. The software tracks orders and minimises the cutting machines' work, product waste, and logistic delays. I started as an individual contributor and later transitioned to managing a team of 4 engineers (*C, C++, C#, SQL*)

## Education and Research

- 2022 **Research Internship** Bloomberg LP  
I worked on accelerating SAT solving using GPUs (*C++, CUDA*).
- 2019-2022 **PhD Student** Max Planck Institute  
I worked at the intersection of formal verification and real-time systems. Additionally, I worked on trace-based schedulability analysis on Linux systems. I mentored three interns and published three papers. (*COQ, C, Rust*)
- 2019-2022 **Master in Computer Science** Technische Universität Kaiserslautern  
I specialised in real-time systems, doing a joint master and PhD program.
- 2016-2019 **Bachelor in Computer Science** Università degli studi di Torino  
I specialised in computability and formal methods.

### Publications

- 2021 **Foundational Response-Time Analysis as Explainable Evidence of Timeliness** Max Planck institute  
I developed POET, a tool that yields a formally verified worst-case-scenario timing analysis. I first-authored a publication at ECRTS2022, winning its *outstanding paper* award.  
(<https://drops.dagstuhl.de/opus/volltexte/2022/16336/pdf/LIPICs-ECRTS-2022-19.pdf>)
- 2022 **From Intuition to Coq: A Case Study in Verified Response-Time Analysis, FIFO Scheduling** Max Planck institute  
We developed a formally verified response-time analysis for FIFO schedulers, challenging the classic pen-and-paper approach. (<https://people.mpi-sws.org/~kbedarka/rtss22.pdf>)

## Selected Open-Source Projects

- 2021 **POET** Max Planck Institute  
The tool I created as part of my first academic publication. It is the first-ever implementation of a foundational response-time analysis. (<https://gitlab.mpi-sws.org/RT-PROOFS/POET>)
- 2020-2022 **PROSA** Max Planck Institute  
I was one of the main contributors of PROSA during my stay at MPI-SWS. PROSA is one of the most influential formally-verified frameworks in the real-time systems' community. (<https://gitlab.mpi-sws.org/RT-PROOFS/rt-proofs>)
- 2022 **Treecode** Personal  
I created a novel 2D scannable code that encodes messages as unique trees. ([www.maida.me/treecode](http://www.maida.me/treecode))
- 2018 **Fast Mobile Cycle (FMC) Framework and Toolkit** 34BigThings  
I developed a Unity3D framework that accelerates the creation of production-ready casual games, paired by a Python toolkit to execute bulk operations on the games. ([www.github.com/340penThings](http://www.github.com/340penThings))