

# Marco Maida

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With over **ten years of professional experience**, I specialize in designing and implementing systems that tackle complex problems at scale. My expertise spans both research and engineering, with a strong foundation in **C++, Rust, C, Python, C#**, and **Coq**. Currently based in **London**, I work as a **Tech Lead** at **Wayve**, leading the inference performance team for Wayve's autonomous vehicle stack.

## Professional Experience

- Since 2022 **Software Engineer – Self-Driving Technologies** Wayve Ltd  
I designed, implemented, and maintained several key systems within Wayve's on-board software stack for autonomous vehicles. This includes sensor data collection, alignment, packaging, data upload, and real-time neural network inference. Since December 2024, I have been serving as the **Tech Lead** of the inference performance team, responsible for the core inference component. (*ROS2, Linux Kernel, C++, Rust, Python*).
- 2016-2019 **Software Engineer – Videogames** 34BigThings  
I contributed to five major game titles, focusing on game infrastructure, AI, gameplay, and development tools. I worked on both single-player and online multiplayer games shipped on Steam, PS4, XboxOne, Switch, and mobile platforms. (*Unity3D, C#, Unreal Engine, C++*).
- 2015-2016 **Software Engineer – Videogames, Simulation** Maserati, Choralia  
I led two freelance B2B projects: developing an educational game for mobile and browsers, and collaborating to create a 3D visualization tool for product presentation. (*Unity3D, C#, JavaScript*).
- 2013-2016 **Software Engineer – Industrial Software** R.O. srl  
I contributed to a suite of software solutions for glass processing factories, focusing on order tracking and optimizing machine work, product waste, and logistics. During my third year, I managed a team of 4 junior 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  
My research focused on formal verification and real-time systems, specifically verifying the timeliness of software systems. I published three papers and mentored three interns. (*COQ, C, Rust*).
- 2019-2022 **Master's in Computer Science** Technische Universität Kaiserslautern  
I specialized in real-time systems as part of a joint master's and PhD program.
- 2016-2019 **Bachelor's in Computer Science** Università degli Studi di Torino  
I specialized in computability and formal methods.

## Selected Publications

- 2025 **Claycode: Stylable and Deformable 2D Scannable Codes** SIGGRAPH 2025  
★ *Journal publication in Transactions of Graphics. Selected for CAF trailer.*  
We introduced Claycodes, a new type of visual code that breaks free from traditional rigid grids like QR codes. Claycodes encode data as a tree structure and allow full customizability and deformation, with real-time scanning capabilities. (<https://arxiv.org/abs/2505.08666>).
- 2022 **From Intuition to Coq: A Case Study in Verified Response-Time Analysis, FIFO Scheduling** RTSS 2022  
We developed a formally verified response-time analysis for FIFO schedulers, challenging traditional pen-and-paper methods. (<https://people.mpi-sws.org/~kbedarka/rtss22.pdf>).
- 2021 **Foundational Response-Time Analysis as Explainable Evidence of Timeliness** ECRTS 2022  
★ *Outstanding Paper Award.*  
I developed POET, a tool for formally verified worst-case scenario timing analysis. (<https://drops.dagstuhl.de/opus/volltexte/2022/16336/pdf/LIPIcs-ECRTS-2022-19.pdf>).

## Selected Open-Source Projects

2025	<b>Claycode</b> Inventor and lead contributor. Claycode includes a generator website, an Android scanner app, and significant research code.	<a href="https://claycode.io">https://claycode.io</a>
2020-2022	<b>PROSA</b> Main contributor to PROSA, one of the leading formally-verified frameworks in the real-time systems community.	<a href="https://gitlab.mpi-sws.org/RT-PROOFS/rt-proofs">https://gitlab.mpi-sws.org/RT-PROOFS/rt-proofs</a>
2022	<b>Treecode</b> The precursor to Claycode, a novel 2D scannable code that encodes messages as unique trees.	<a href="http://www.maida.me/treecode">www.maida.me/treecode</a>
2021	<b>POET</b> First-ever implementation of a foundational response-time analysis tool, created as part of my first academic publication.	<a href="https://gitlab.mpi-sws.org/RT-PROOFS/POET">https://gitlab.mpi-sws.org/RT-PROOFS/POET</a>
2018	<b>Fast Mobile Cycle (FMC) Framework and Toolkit</b> Developed a Unity3D framework that accelerates production-ready casual game creation, paired with a Python toolkit for bulk operations.	<a href="https://www.github.com/340penThings">www.github.com/340penThings</a>