Nicolas Mattia

I am a software engineer with a passion for functional programming,
correctness and robustness. I like simple solutions.

Employment

Software Engineer at Tweag I/O

I have been working as a Haskell consultant with **Tweag I/O** since September 2016. I was acting directly with clients and learned how to turn moonshots into production-ready projects.

- I was part of the research team for an **EU-funded project** which aims at redefining data storage for the era of extreme data and exascale computing, and
- I was on a two-man mission for developing a new data platform for a Fortune 500 company; the platform enables data scientists from several continents to easily share large datasets for reproducible research, and
- I worked on a spreadsheet engine that allows Python, R and other languages to be used interactively alongside Excel. I advised on, and helped implementing the API and database designs, auto scaling infrastructure and code quality measures.

Platform Engineer at Pusher Ltd.

I worked at **Pusher Ltd.** in London for a year starting in September 2015. This taught me that with every million users come a million ways to break your platform.

- I contributed to the design and development of a high-performance, distributed PubSub system, and
- I developed a pluggable system for reporting and monitoring the performance of the platform, and
- I wrote `nagios-sink`, a simple service that gathers the statuses of Nagios endpoints.

Education

2013 – 2015   **Msc, Information Technology & Electrical Engineering** – ETHZ, Zurich

Graduated in Systems & Control *from the* ITET *department.*

2012 – 2013   **Erasmus** – TU Wien, Vienna

Erasmus year in Vienna as Elektrotechnik/Bau-ingenieur.

2010 – 2013   **BSc, Micro-Engineering** – EPFL, Lausanne

Graduated as a Microtechnicien (micro-engineer) *from the* MT *department.*

Technical Experience

Open Source   I often contribute to the Open Source projects that I use in my work, either to bring attention to an issue – or directly fix a bug – or to submit a new feature. I also have a few projects of my own, including:

- **stutter** – A command-line tool that generates strings based on regex-like input,
- **rulex** – A Ruby DSL for generating LaTeX, and
- **mask** – the Haskell Makefile parser and generator.

Tools

Haskell is my language of choice for most projects. I have leveraged its powerful type system on many occasions, have contributed to core libraries and have a good understanding of its runtime characteristics.

Nix is my go-to package manager and build system. I contribute to Nixpkgs, have deployed Nix in production to team to up to 40 engineers and have acquired an excellent understanding of its model, capabilities and limitations.

Proficient with **Go**, **Java**, **Ruby**, **C/C++**, **Kubernetes**, **Terraform**

Basic knowledge of **Rust**, **Erlang**, **LaTeX**, **x86 assembly**, **JavaScript**, **Python**

Academic & Speaking

Speaking

A Fully Functional Webapp – Talk at WebZuri
Discussions around and examples of full-FP stacks for web applications.

Academic

Dominating the Stone Age – Master's Thesis
Solved graph-theoretic problems using networks of finite-state machines.

Toehold DNA Languages are Regular – Publication
By Sebastian Brandt, Nicolas Mattia, Jochen Seidel, and Roger Wattenhofer, 2015.
In ISAAC'15.

Parallel DNA – Semester Project
Modeled and studied parallel, DNA-based computations.

Parallelizing the Schrödinger Equation – Semester Project
Developed a fast parallel algorithm for solving the Retarded Green's Function.

Beyond technology

- Languages:
  - French (native speaker)
  - English (fluent)
  - German (professional proficiency)
  - Italian (social proficiency)
- I am a music enthusiast and have played the lead guitar in several local bands, the latest in date being **Soldat Lemmy**. I also enjoy bouldering and sketching.