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 at **Tweag I/O** since September 2016. I have lead projects from when they were moonshots to production-ready products.

- I was part of the research team for an **EU-funded project** which aimed at redefining data storage for the era of extreme data and exascale computing.
- I was one of only two developers who created an entirely new data platform for a Fortune 500 company. To this day, the platform enables data scientists from several continents to easily share large datasets for reproducible research.
- I am currently a core developer of a new form of spreadsheet engine, which allows Python, R and other programming languages to be used interactively alongside Excel. I have 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 from September 2015 to July 2016. One of my key lessons at the job was that with every million users comes a million ways to break a platform.

- I contributed to the design and development of a high-performance, distributed PubSub system.
- I developed a pluggable system for monitoring and reporting the performance of the platform.
- 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 Microtechnician *from the* MT *department.*	

Technical Experience

Open Source   I contribute to the Open Source projects that I use in my work regularly, either to bring attention to an issue, to directly fix a bug, or to submit new features. In addition, I maintain 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.
- **mask** – the Haskell Makefile parser and generator.

Tools

Haskell is my language of choice for most projects. I have learned to leverage 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 teams of up to 40 engineers and have acquired an excellent understanding of its model, capabilities and limitations.

I am proficient with **Go**, **Java**, **Ruby**, **C/C++**, **Kubernetes** and **Terraform**.

I have a basic knowledge of **Rust**, **Python**, **JavaScript**, **Erlang**, **LaTeX** and **x86 assembly**.

Academic & Speaking

Speaking

A Fully Functional Webapp – Talk at WebZuri – September 2017
Discussions around and examples of functional programming 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.

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