

Diogo Castro

Curriculum Vitae

Summary

I'm a Software Engineer based in Porto, Portugal.

My professional journey began as a C# developer, but Functional Programming soon piqued my interest and led me to learn Scala, Haskell, and PureScript. More recently, I've also been using Rust for commercial projects.

I love building robust, reliable and maintainable applications.

I also like teaching and I'm a big believer in "paying it forward". I've learned so much from many inspiring people, so I make it a point to share what I've learned with others.

I blog about FP and Haskell at <https://diogocastro.com/blog>.

Experience

April 2020-Present **Team Lead, Software Engineer, Serokell**, Remote.

Led the internal-dev team in developing and maintaining several open-source libraries and applications written in Haskell, such as [xrefcheck](#) and [tzbot](#). Authored [tztime](#).

Led the development of [Haskell Certification](#), a program for assessing and certifying a candidate's Haskell skills (now operated by the Haskell Foundation).

Developed a Rust application using Tauri for controlling Molecular Rotational Resonance (MRR) spectroscopy instruments, perform measurements, and visualize and analyze the measurement data.

Helped grow the Haskell and Rust ecosystems for the Tezos blockchain by developing a varied set of tools: a parser, typechecker and interpreter for the Michelson language, a REPL, a test framework for smart contracts, a client library for interacting with the chain, among others.

Led an effort for onboarding new hires and interns.

Nov 2017-April 2020 **Principal Software Engineer**, *SpotX*, Belfast, UK.

Senior Software Engineer, *SpotX*, Belfast, UK.

Developed RESTful web services in Scala, using the cats/cats-effect framework and Akka HTTP. Used Apache Kafka for publishing of events, and Prometheus/Grafana for monitoring.

Worked on a service that aimed to augment and enhance Apache Druid, a timeseries database.

Authored a Scala library for calculating the delta of any two values of a given type using Shapeless, a library for generic programming.

Taught a weekly internal Scala/FP course, with the goal of preparing our engineers to be productive in Scala whilst building an intuition of how to program with functions and equational reasoning.

Trained new hires and help them bridge the gap between what they already know and the world of FP in Scala.

May 2013-Nov 2017 **Senior Software Engineer**, *NantHealth*, Belfast, UK.

Software Engineer, *NantHealth*, Belfast, UK.

Responsible for designing, unit testing, implementing and deploying a variety of applications, such as:

- RESTful APIs, using ASP.NET Web API, ActiveMQ, Couchbase, and MS SQL Server;
- Front-end single-page applications, using AngularJS, TypeScript, LESS;
- Internal libraries written in C#;
- Routing of messages between applications using Java and Apache Camel.

I've also built some small internal tools to help streamline my coworkers' and my day-to-day activities, using Scala, Haskell and PureScript.

I helped organise a weekly Brown Bag Session during lunch hour, in which people talk about topics that interest them. Sometimes brought an exercise for people to solve in a language of their choice, and share their solutions at the end.

Aug 2012-Mar 2013 **Researcher**, *Fraunhofer*, Porto, Portugal.

Developed the navigation module for an Android application, using both turn-by-turn and landmark-based approaches. Studied and compared the efficiency of these approaches in navigating older adults with mild dementia. Developed complex heuristics to evaluate landmarks data retrieved from OpenStreetMap, and used the device's sensors (e.g., gyroscope, accelerometer) to locate and navigate the user.

Talks

- Jan 2019 **The Haskell Epidemic**, *The Crystal Ball BASH, Belfast*.
A presentation about some of Haskell's most influential features and how Haskell has shaped the software engineering landscape.
Recording: <https://youtu.be/nnoOF1HeAls>
Slides: <https://talks.diogocastro.com/the-haskell-epidemic/>

Education

- 2007-2013 **Master's in Informatics and Computing Engineering**, *Faculty of Engineering of the University of Porto, Portugal*.