

Breno Fatureto de Bortoli

Curriculum Vitae

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Profile

Software engineer with focus on cloud platforms. Worked on large distributed systems and highly-reliable web services. Curious and passionate about computing. I like to dive deep into complex subjects.

Skills and Experience

Professional experience with Go, Typescript, Javascript, and F#. Experience developing large-scale web services. Operations, Kubernetes cluster management skills. Over 10 years of experience with Linux.

Platform Software Engineer – Replit (April 2022 - Present)

[Replit](#) is an AI-driven software creation platform where everyone can build, share, and ship software fast.

- Experience with developing and managing large-scale, multi-tenant container infrastructure and network services.
- Created a new availability-region for a large-scale, multi-tenant container cluster. Migrated millions of user containers to the new region with zero service interruption.
- Worked on a large-scale container infrastructure rearchitecting that enabled 3 9s session reliability.
- Experience with Google Cloud Platform.
- Go/TypeScript software development.
- Kubernetes.
- NATS
- Security, public key infrastructure.
- Infrastructure as code (Terraform, CDK), operations.

Software Engineering Intern – Datarisk (November 2021 - April 2022)

[Datarisk](#) develops custom data processing solutions and technologies. As part of the technology team, I am helping develop the company's model API platform. We use F# and the .NET environment for development, along with Azure for online hosting.

- Designed and implemented the backend for a new ML-powered product in F#.
- Developed a serverless solution based on Azure Functions for monitoring our service
- Worked on maintaining the platform's API
- Reworked the company's product database organization.
- Added and maintained pages to the company's web application.

Software Engineering Intern – Axur (May 2021 - November 2021)

[Axur](#) is a cybersecurity company that aims to make the web a safer place.

- Worked on a agile team which incorporates modern DevOps practices
- Front-end development with React
- Developed a statistics page containing interactive graphs showing data regarding online threat tracking to customers
- Added extensions to Java-based microservice APIs

Teaching Assistant – Functional Programming in Haskell (January 2022 - May 2022)

Introductory Haskell course for Computer Science and Engineering undergraduates.

Teaching Assistant – Programming Languages (2020-2021)

Teaching assistant for the Programming Languages course during two semesters. During this period, I worked on interpreters for multiple didactical programming languages in Haskell.

Undergraduate researcher – Analysis of Software Product Lines (November 2019 - May 2022)

Worked on enhancing and developing software for the analysis of Software Product Lines. My team implemented implementing new techniques in the literature, as well as developing a solution for reusing previous results in order to speed up the analysis.

Selected Publications

- [Sharding Infrastructure: The Regional Goyal Project](#)
- [Worldwide Repls](#)
- [Deploying F# Azure Functions](#)
- [Introduction to Azure Functions in F#](#)

Selected Projects

- [Programming Language Implementation](#)

A sequence of interpreters and compilers of increasing complexity in Haskell, both in the language specification as well as the functional programming features used in the implementation, such as applicatives and monad transformers.

- Lisp Interpreters I have learned a lot writing simple Lisp interpreters using different languages and techniques.
 - [In C, with a garbage collector,](#)
 - [In Haskell, using only the standard library,](#)
 - [In Haskell, more advanced implementation.](#)
- [JVM](#)

Natural Languages

- English – fluent
- Portuguese – native language

Education

Computer Engineering – Universidade de Brasília (2017-2022)

Complementary Courses

I have done various courses on interesting topics that are not necessarily covered in my University education.

- Build a Modern Computer from First Principles: From Nand to Tetris (Project-Centered Course) by Hebrew University of Jerusalem on Coursera.
- Machine Learning by Stanford University on Coursera.
- Neural Networks and Deep Learning by deeplearning.ai on Coursera.
- Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera.
- Structuring Machine Learning Projects by deeplearning.ai on Coursera.
- Convolutional Neural Networks by deeplearning.ai on Coursera.
- Sequence Models by deeplearning.ai on Coursera.
- Deep Learning by deeplearning.ai on Coursera.