Diogo Filipe Paz Barros

Software Engineer

Personal Information

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About Me

Eternally curious and passionate about how things work. Previously a wannabe physicist until I started programming in a graphic calculator, after which I fell down the rabbit hole called software engineering.

Studied at Faculdade de Ciências da Universidade de Lisboa where I acquired my Bachelor's and Master's degrees. During my later years at university, I indulged in academic research under the LASIGE unit, specifically the Reliable Software Systems area, developing a new programming language.

Fresh out of university and looking for a challenging project to build my skills further, my main interests are programming languages, parallel and concurrent programming, distributed systems and creating software tools to help streamline processes wherever needed.

Education

- **2014/15 – 2016/17**: Sciences and Technologies Course, Escola Secundária Braamcamp Freire, average of 17.

- **2017/18 – 2019/20**: Bachelor's degree in Informatics Engineering, Faculdade de Ciências da Universidade de Lisboa, average of 16. Some subjects to note:
  - Programming Principles – 19
  - Object Centered Development – 19
  - Computation Theory – 16

Spoken Languages

Portuguese ◆
●●●●●

English ◆
●●●●○

Skills

Java ◆
●●●●○

Haskell ◆
●●●●○

Rust ◆
●●●○○

Python ◆
●●●○○

SQL (MySQL) ◆
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Other Skills

Java Spring ◆
JUnit ◆
Git ◆
Maven ◆
Docker ◆
Tauri + Vue ◆
HTML/CSS/JavaScript ◆

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- **2020/21 –2022/23:** Master's in Software Engineering, Faculdade Ciências da Universidade de Lisboa, average of 17. Some subjects to note:
  - o   Parallel and Concurrent Programming – 18
  - o   Compilation Techniques – 19
  - o   Domain Languages – 19

- **03/2023:** Presented my MSc thesis, "*Shared Channels on Context-free Session Types*" ([available here](#)), on implementing safe *many-to-many* session typed channels. The first use case was FreeST's standard IO and file primitives, but also opened implementations for asynchronous programming and an MPI-style implementation. Final grade: 19.

Experience

- **12/2019 – 02/2024**: Member of LASIGE
  Working in coordination with professors Vasco Vasconcelos and Andreia Mordido in developing a new functional programming language, **FreeST**, which aims to verify and guarantee that parties follow a specified protocol . This work includes: developing the compiler, tests, a documentation tool, IDE extensions, and a new website with an integrated editor.

- **07/2020 – 10/2020:** Fellow at Bee2Waste Summer School, promoted by NOVA Information Management School. In this project ideas were developed by combining blockchain solutions, smart-contracts and waste management in order to modify behaviors and generate value in all of the waste management chain. Final grade: 17.

- **01/2021:** Student volunteer at the programming languages conference, POPL.

- **04/2021 – 07/2021:** Research grant (BI) given by FCiências.ID within the scope of the SafeSessions project at LASIGE.

- **10/2021 – 01/2022:** *Programming 1* monitor at Faculdade de Ciências da Universidade de Lisboa. Lectured basic programming skills in Python to undergraduate students.

- **11/2021 – 02/2022:** Research grant for Master's students (BI-EM) at LASIGE.

- **09/2022:** Presenter at INForum Informatics Symposium 2022

- **11/2022 – 02/2024:** Research grant (BI) given by FCiências.ID within the scope of the SafeSessions project at LASIGE.

- **04/2023 – 07/2023:** Invited Assistant and responsible for *Domain Languages* at Faculdade de Ciências da Universidade de Lisboa. Lectured MSc students on how to design and implement domain-specific programming languages using Java and Xtext.