



# João de Jesus Costa

## Software Engineer



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joacosta.dev



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github.com/JoaoCostaIFG

## About me

I'm a software engineer with a Master's degree in Informatics Engineering at FEUP. My interests mainly reside in developing software, taking care of my servers, writing (I have a blog), and developing projects using microcontrollers. I have experience working in large and fully-remote teams, and publicly presenting my work and ideas.

## Skills

### Hard skills

C - C++

Linux - DevOps

Python

Java

JavaScript - TypeScript

### Language skills

Portuguese

Native

English

C1

### Soft skills

problem-solving flexibility communication

## Hobbies/Interests

On my free-time, I'm usually working on personal projects involving informatics and (sometimes) electronics. Often, these projects lead to contributions to open-source software. I also enjoy maintaining a personal home-server and a blog focused on tech.

## Education

|             |  |  |
|-------------|--|--|
| 2021 - 2023 | <b>Master in Informatics Engineering</b><br><i>Final grade 18/20</i> | Faculty of Engineering of the University of Porto (FEUP) |
| 2018 - 2021 | <b>Bachelor of Science</b><br><i>Final grade 18/20</i>               | Faculty of Engineering of the University of Porto (FEUP) |

## Publications

|      |   |
|------|---|
| 2023 | <b>Verification of the VxWorks real-time operating system for DO-178C compliance</b><br>My Master's thesis. The objective of this thesis was to analyze and optimize the processes of the real-time OS verification team at Critical Software. This resulted in a list of bottlenecks and action to address them, and the development of solutions/tools for some problems. |
|------|---|

## Awards

|      |  |
|------|--|
| 2018 | <b>Award for highest grade in highs cool</b>         |
| 2018 | <b>Merit scholarship from Amorim Cork Composites</b> |

## Work experience

|              |   |                   |
|--------------|---|-------------------|
| 2022-current | <b>Embedded Software Engineer</b><br>Embedded Software Engineer working on the verification and validation of embedded software for the aerospace industry. Started working at this position for my Master's thesis. The objective of this thesis was to analyze and optimize the processes of the project's developer team. This was achieved by identifying the bottlenecks and developing solutions/tools. | Critical Software |
| 2022         | <b>Software Developer Intern</b><br>Enrolled in the summer internship program at Critical Software (Summer Camp), with the objective of learning more about the company's activities, and developing soft-skills. Developed three projects, and attended multiple workshops during this one-month internship.   | Critical Software |
| 2020-2021    | <b>Web Game Developer</b><br>Responsible from the team tasked to recreate a set of educational games, developed in flash, in the Unity game engine. These games were then hosted in the company's website to be played by children (aged 6 to 14) at school. Developed the games in C# for the Unity game engine, with an emphasis on performance so the games ran on WebGL on lower-end computers.           | LusolInfo         |



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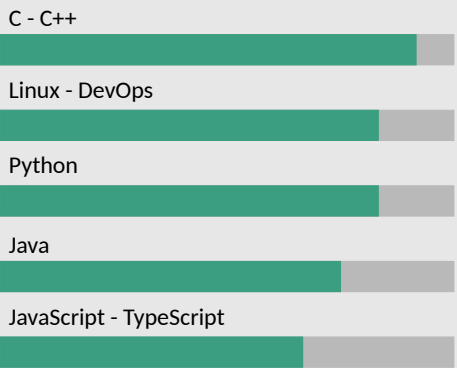
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## Skills

### Hard skills



### Language skills

|            |        |
|------------|--------|
| Portuguese | Native |
| English    | C1     |

### Soft skills

problem-solving flexibility communication

## Projects

- 2022** **TraSMAPy** [Project's GitHub page](#)  
A Python API for the SUMO traffic simulator with the objective of allowing researchers with limited knowledge in informatics and programming to model road traffic simulations. The API abstracts lower level concepts of the simulator and builds new concepts to make it easier to build agent-based simulations,
- 2022** **µKernel** [Project's GitHub page](#)  
A real-time micro-kernel for the Arduino UNO supporting POSIX style tasks, mutexes, EDF scheduling, task sleeping, and assertions. Responsible for most of the implementation and research for the project.
- 2021** **Dry Beans classification** [Project's GitHub page](#)  
Model (unsupervised learning) to classify beans between seven classes with similar features. This served as an opportunity to gain experience in data science and machine learning libraries for python. Responsible for part of the data analysis and treatment, the application of unsupervised learning algorithms, and the comparison of the results.
- 2021** **Segmentation Fault** [Project's GitHub page](#)  
Online QA web application resembling [StackOverflow](#). This project was developed with the purpose of learning Bootstrap, Docker, Laravel, and PostgreSQL. Responsible for the Docker image, database design and indexes, most of the front-end, and accessibility/design choices.
- 2020-2021** **MAWW** [Project's GitHub page](#)  
Program that allows users (using X11) on Linux to have animated backgrounds, regardless of their compositor. This project is available as an [Arch Linux package](#) on the AUR.