

# José Filipe Ferreira

COMPUTER SOFTWARE ENGINEER · HIGH PERFORMANCE COMPUTING

Real, Braga, Portugal

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## Experience

### Strypes Technical Software

EMBEDDED SOFTWARE DEVELOPER

- Develop CPD routines (Calibration, Performance and Diagnostics) for ASML lithography machines.

Porto, Portugal

Jun. 2023 - Present

### Minho University

RESEARCHER @ MACC & INESC TEC

- Research project "National Competence Centres in the framework of EuroHPC (EUROCC)"
- Research Scheduling Strategies alongside Vectorization on Multi-core Servers using C++

Braga, Portugal

Oct. 2022 - Dec. 2022

## Education

### Minho University

MASTERS IN COMPUTER SOFTWARE ENGINEERING (15/20)

- Dissertation: *Improving Digital Image Correlation in the TopoSEM software package* (18/20)
- Vectorization and Parallelization on Heterogeneous Platforms
- System Deployment and Benchmarking (Ansible & Google Cloud Platform)

Braga, Portugal

2020 - 2023

### Minho University

BACHELOR IN COMPUTER SOFTWARE ENGINEERING

- Programming Paradigms (Functional, Imperative, Object-Oriented)
- Algorithms and Complexity, Program Calculus
- Computer Architectures, Computer Graphics, Operating Systems
- Databases, Distributed Systems, Networks

Braga, Portugal

2017 - 2020

## Skills

**Programming** C, C++, CUDA, GLSL, Bash, Python, Java, Rust, SQL

**Tools** Git, Linux, LaTeX, Docker, CI/CD, GitHub Actions

**Languages** Portuguese (native), English (C2 with Cambridge CPE)

## Projects

### Improving Digital Image Correlation in the TopoSEM software package

C++, VECTORIZATION, PARALLELIZATION, OPENCV

- Port a novel DIC MATLAB implementation to C++, Profile using vTune and Improve Performance
- Implement a Generic Front Wave Propagation Batching Scheduler

Masters Dissertation

18/20

### Parallel Raytracer

C++, PARALLELIZATION

- Raytracer Performance Optimization for heterogeneous servers
- Use a Bounding Volume Hierarchy data structure to improve the rendering performance of a pool of parallel workers

University, Repository

### Engine

C++, OPENGGL, XML

- Generic Graphic Engine capable of efficiently rendering any kind of scene defined in a XML configuration file

University, Repository

### Suitcase

DOCKER, DOCKER COMPOSE, CI/CD, GITHUB ACTIONS

- Manage containerized services running on my homelab using Docker Compose
- Self-host a calendar server, a file share server, a media streaming server, a book management server and more
- Publish my own services through dockerhub in a CI/CD pipeline

Repository

# Volunteering

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## ENEI 2020

ORGANIZATION MEMBER, GRAPHIC DESIGNER AND PHOTOGRAPHER

*Braga, Portugal*

*Jul. 2019 - Feb. 2020*

- National Meeting of Computer Science Students focused on Talks and Workshops with various Companies
- Gained experience in Leading Teams and Organizing Large Events

## CeSIUM

GRAPHIC DESIGNER AND PHOTOGRAPHER

*Braga, Portugal*

*Set. 2018 - Nov. 2020*

- Group of Software Engineering Students from the Minho University with the goal of organizing Events, Talks and Workshops
- Gained experience working as a team in a asynchronous environment

## Official MiEI Discord

CO-CREATOR AND ADMINISTRATOR

*Discord*

*Feb. 2018 - Present*

- A community with 1900+ members focused on helping and mentoring new Software Engineering Students