

# Alexandre Mascarenhas

Msc. Computer Science

## EXPERIENCE



### About me

Hello, I'm Alexandre Mascarenhas, I love technology and the integration of software and hardware. I'd like to apply this knowledge in industry, especially in challenging projects that involve all the stages of inventing a product.

### Personal

Alexandre Mascarenhas  
Nationality: Brazilian  
1996

### Especialization areas

Embedded systems • Software engineering • Evolutionary Computation • Development and maintenance of hardware

### Interests

Embedded systems / IoT  
Software engineering / Data science / Algorithm development  
Research / Linux

### Tools and Environments

Linux / Git / VsCode / Nano  
/ Python Notebook / Proteus  
/ EagleCAD

### Hobbies

Skateboarding / Bike / Soccer  
/ Music / Travelling

Alexandre Mascarenhas

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mascarenhasav

2024-

### Ballast Control Operator

OPERATION AND MONITORING · Petrobras, Brazil 📍

**Description:** Control and monitoring of the offshore platform stability system. Ensure operation within established production standards.



2024-2025

### AI Engineer

DEVELOPMENT AND INFRASTRUCTURE · Hootzpa, Brazil 📍

**Description:** Development of AI solutions. From prompt development to API availability via Kubernetes.



2017-2024

### Development Technician

EMBEDDED AND MONITORING SYSTEMS · Sao Paulo Metro, Brazil 📍

**Description:** Develop a device capable of collecting data from assets in the field, analysing it locally and sending the information to a central server for subsequent analysis and predictive maintenance.

**Achieved:** The device was patented and in 2022, the device was responsible for saving the company 8 million in maintenance costs.



2023-2024

### Research Assistant

EMBEDDED SYSTEMS ENGINEER · Sony Computer Science Labs, Japan 📍

**Description:** Development of a COVID 19 related detection and prediction device. Based on an ARM processor with embedded Linux and local processing in C++ and Python.

**Achieved:** Patent pending.



2022-2024

### Research Assistant

COMPUTER VISION · University of Tsukuba, Japan 📍

**Description:** The research uses neural networks (Unet) and subsequent data processing on raw digital images to estimate certain characteristics and determine plant growth rates.

**Achieved:** The project improved fruit valuation and collection by 60% compared to the previous method.



## ACADEMIC

2024

### Msc Computer Science

EVOLUTIONARY COMPUTATION · University of Tsukuba 🏛️



2021

### Bsc Physics

COMPUTATION · University of São Paulo 🏛️



2021

### Bsc Electric Engineering

ELECTRONIC · Cruzeiro do Sul University 🏛️



## CODING

PYTHON

5 yrs

C/C++

4 yrs

HTML, CSS

2 yrs

MATLAB

2 yr

VHDL

1 yr

JS, PHP

1 yr

SQL

1 yr

## CERTIFICATES & AWARDS

2022

**CollaboTICS 2022 Workshop** by Université Grenoble Alpes, France

2020

**Python and Spark for Big Data and Machine Learning** by 4Linux Brazil

2015

**Industrial Electronic Honor Medal** by Worldskills competition

2013

**Bronze Medal** by OBMEP - Brazilian Mathematical Olympics of Public Schools, Brazil

## LANGUAGES

English  
Spanish  
Portuguese

● ● ● ● ● Professional  
● ● ● ● ● Basic  
Native

## PUBLICATIONS

2024

"*Novel Genotypic Diversity Metrics in Real-coded Optimization on Multi-modal Problems*", in IEEE WCCI CEC

2023

"*AbCD: A component-wise adjustable framework for dynamic optimization problems*", in ACM GECCO

2023

"*Skateboarding stance and handedness: A brief analysis of relationship, proportions and influences*", in: Arxiv

## PROJECTS

2023

AbEC - **Adjustable Evolutionary Components**. A framework to research and Development in Evolutionary Computation. **Link:** <https://abec-ec.github.io>

2020

**Metro Data Logger (MDL)**. A review of the smart data collector for subway railway systems (PORTUGUESE). **Link:** MDL

2020

**Terminaltor**. A browser-based terminal just for fun. **Link:** Terminaltor