

Carlos Miguel Fernando

Senior Full Stack Engineer

CONTACTS

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SKILLS

MAIN TECHNOLOGIES

Python
Javascript
NodeJS
AWS
Docker
React

OTHER

Databases

- PostgreSQL
- MongoDB
- DynamoDB
- MySQL

Frameworks

- Next.js
- Express.js
- Pug.js (Jade)

Other

- Kafka
- RabbitMQ
- C, C++, C#
- Java
- HTML5/CSS3
- R
- Redis
- Microcontrollers
- Deep/Machine Learning
- Bash
- GitHub Actions
- Tensorflow
- Datadog
- Sumologic
- \LaTeX

Methodologies

- Scrum
- Agile

ABOUT ME

Jack of all trades, master of some.

As an engineer I'm able to design complex systems, build and scale them from infrastructure to frontend.

Having worked in the healthcare, music, financial and retail industries, critical thinking, resilience and adaptability are some of my strong skills.

I'm a natural extrovert who loves to engage in meaningful conversation, passionate about good books, photography and freshly brewed coffee.

EDUCATION

FACULDADE DE CIENCIAS DA UNIVERSIDADE DO PORTO

Computer Networks and Systems Engineering

September 2017 - June 2018 | Master's Degree

Focus on Deep Learning, Computer Vision, Data Mining, Cryptography.

Thesis: Using Deep Learning to Identify Modern Art

FACULDADE DE CIENCIAS DA UNIVERSIDADE DO PORTO

Computer Science

September 2010 - September 2017 | Bachelor's Degree

Augmented Reality MAGIC: The Gathering game using OpenCV.

Android VR Museum Experience developed with Unity.

PROJECTS

Prospective Surgery Database Platform | PROFESSIONAL

September 2018

Surgery and Post-Surgery record-keeping platform for major Health specialties allowing data analysis and patient monitoring.

Technologies: Node.js, Pug.js (Jade), Express.js, MongoDB

Using Deep Learning to Identify Modern Art | ACADEMIC, THESIS

May 2018

Convolutional Neural Network based Painting Style Identification for Modern Art Paintings. Model analysis and style trait identification for Proto-Image generation, Style transfer between images and new image generation.

Technologies: Python, Tensorflow, Deep Learning, Data Mining

Augmented Reality Playing Card Recognition | ACADEMIC

December 2016

Augmented Reality MAGIC: The Gathering game using OpenCV. Recognizes the cards using Computer Vision techniques in order to display all the stats about a current game and provide an Augmented Reality experience.

Technologies: OpenCV, Java

COURSES

UNIVERSITY OF MESSINA, SICILY

Arduino Technology as the enabler of Cyber Physical Systems

August 2017

Interfacing, configuring, and programming of embedded systems.

UNIVERSITY OF LIÈGE, BELGIUM

The Cyborg of Tomorrow, Biomechanical Engineering

July 2018

Biomechanics, modeling of human movement, tissue engineering, medical imaging, biophysics and biomimetics.

HARD SKILLS

Architecture
Scalability
Microservices
System Design
Artificial Intelligence
Management

SOFT SKILLS

Public speaking
Social Skills
Communication

Adaptability
Critical thinking
Problem-solving
Flexibility
Resourcefulness

Leadership
Management
Motivating
Accountability

Confidence
Cooperation
Enthusiasm
Humor
Respectfulness

Collaboration
Emotional intelligence
Empathy
Teamwork

Motivation
Reliability
Resilience

EXPERIENCE

Viz.ai | SENIOR FULL STACK ENGINEER & TECH LEAD

June 2021 - Present (2yr, 9mo) | San Francisco, CA (Remote)

June 2021 Full Stack Engineer (8mo)
February 2022 Full Stack Engineer & Tech Lead (5mo)
July 2022 Senior Software Engineer & Tech Lead (1yr, 8mo)

Development: Led the architectural design and developed a PoC for a new Authorization service. Designed and implemented the architecture of a client-facing user administration platform, evolving it from initial concept to production. Developed various features for the existing platforms and other legacy services, significantly contributing to areas like user management, analytics, authentication, data retention processes, amongst others.

Microservices Transition: Played a key role in the transition from a monolithic structure to a microservice architecture, improving scalability and efficiency.

Localization: Led the implementation of localization infrastructure, enabling the expansion into the EMEA region and adding support for over 8 languages.

System Security and Compliance: Worked closely with the Operational Security team, playing a key role in identifying and addressing system vulnerabilities, and significantly enhancing the platform's security to achieve A+ certifications.

Project Leadership and Management: Following the departure of the previous Engineering Manager, I temporarily assumed the role, leading a cross-functional team of 9 people while the company recruited a permanent replacement.

Advocated for and implemented best practices to improve team productivity and project quality, having authored extensive technical documentation, laying the groundwork for sustained engineering excellence and knowledge sharing.

Worked closely with the Architecture team, contributing to strategic decision-making regarding technology adoption, implementation, and planning for future architectural evolution.

Technologies: Python, JavaScript, PostgreSQL, Flask, DynamoDB, React, Kafka, RabbitMQ, Django, Redis, GitHub Actions, AWS, Docker, Datadog, Coralogix

Reckon.ai | FULL STACK ENGINEER

November 2018 - June 2021 (2yr, 8mo) | Porto, PT

November 2018 Full Stack Engineer (1yr, 2mo)
January 2020 Full Stack Engineer & Tech Lead (1yr, 6mo)

BuyBye Project: Spearheaded the R&D, implementation, and assembly of an automated "micro market" cabinet similar to Amazon Go, with a focus on achieving a checkout process in under 3 seconds. This innovative system used computer vision to automate the shopping experience by identifying products selected by customers. Led the development and integration of microcontrollers (Arduino & Raspberry Pi), sensors, cameras, and network interfacing. Designed and implemented modular infrastructures and distributed microservices, in order to enable scalability and mass production of the micro markets. Developed a comprehensive web platform that served as a sales hub, to enable cabinet control, stock management, metrics, reporting and consumer insights. This cabinet is still live and operating in NOVA University of Lisbon.

Pricing Platforms: Developed platforms to aggregate and visualize market prices in various sectors (groceries, electronics, etc.), enabling price comparison and competitor analysis. Integrated data from multiple sources (leaflets, online), featuring customized reporting and leaflet analysis. Responsible for full-stack web platform development, as well as custom scraping software for real-time data acquisition and client data integration.

Additional Contributions: Developed tools and scripts for enhancing data integrity, alerts, notifications, and database manipulation. Engaged in R&D with microcontrollers, cameras, sensors, PCB design, and electronic board assembly. Contributed to technical writing including patent applications and schematics.

Technologies: Python, NodeJS, Docker, JavaScript, MongoDB, PostgreSQL, Pug.js (Jade), TensorFlow, Microcontrollers (Arduino, ESP), Bash, OpenCV

CERTIFICATIONS

Professional Scrum Master™ I

LANGUAGES

Portuguese
English
Spanish
German (A1.1)

EXPERIENCE (CONT.)

Creighton AI | FULL STACK DEVELOPER

June 2018 - November 2018 (6mo) | Porto, PT (remote)

Financial Analysis Platform: Engineered a distributed scraping system using AWS Cloud Infrastructure to collate financial data from several targeted markets. I developed custom AWS Lambda functions to run Chromium and Selenium-based software efficiently, interfacing with an AWS RDS MSSQL database while maintaining the system within AWS Lambda's limited resource constraints.

Technologies: AWS Cloud Infrastructure, Python, Docker, Selenium, Ionic Mobile Framework

Liderteam - Business Solutions | SOFTWARE DEVELOPER

October 2017 - May 2018 (8mo) | Porto, PT

Operational Control Systems: As the sole engineer, I developed multiple web platforms and mobile applications for "Operational Control Systems," tailored for some large companies. These platforms allowed for operations management, production management, scheduling, payroll, invoicing, and inventory management, some integrating with PDA systems and on-site industrial equipment. I've orchestrated the deployment of platforms in multiple sites, both in Europe and Africa. This role required profound client interaction for thorough requirement gathering and strategic project planning.

Technologies: Microsoft stack (.NET Framework, C#, HTML5, MVC), JavaScript, JQuery, Bootstrap

Sonoro Media | JUNIOR FULL STACK DEVELOPER

May 2015 - October 2017 (2yr, 7mo) | Porto, PT

Music Streaming Software: Developed several features of a NodeJS-based music streaming software tailored for commercial spaces, automated maintenance operations across a network of over 2000 devices and established a complex network infrastructure to facilitate secure remote access.

Technologies: NodeJS, Python, MySQL, JavaScript, HTML5, CSS3, JQuery, SaltStack, Puppet, Network Infrastructures, Shell Scripting, SSH

Centro Hospitalar São João | NETWORK AND SYSTEMS SECURITY / SOFTWARE DEVELOPER

April 2012 - August 2016 (4yr, 5mo) | Porto, PT

Internship: At Centro Hospitalar São João, I initially focused my internship in System Security Analysis and Network Administration, having later pivoted towards Software Development, Data Mining and Automation. My role extended to the development of front-end interfaces for various hospital systems, ensuring security and efficiency.

Technologies: Java, Python, HTML5, CSS3, JavaScript, JQuery, Metasploit Framework

Freelance | FREELANCE FULL STACK DEVELOPER

March 2014 - Present (9yr, 10mo) | Remote

As a freelance Full Stack Developer, I've cultivated a diverse portfolio of websites, web applications, and Android/iOS apps for a variety of clients ranging from companies and events to individuals, delivering robust solutions that meet unique business needs.

Technologies: NodeJS, MySQL, MongoDB, Python, JavaScript, HTML5, CSS3, Bootstrap, JQuery, Express.js, Pug.js (Jade), Java, Swift