JOÃO MIGUEL M F LIMA

SOFTWARE ENGINEER
IOT AND INDUSTRY 4.0 TECH LEAD
GO - PYTHON - C++ - NODEJS DEV
DATA ENGINEER
QUALIFYING IN SELF-DRIVING CARS

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TECHNOLOGICAL SKILLS

PYTHON - NODEJS - SQL - MONGODB

GO - C++ - C - DOCKER - NGINX

GOOGLE CLOUD - AWS - AZURE

EMBEDDED SYSTEMS - OTA - ELECTRONICS

PROJECTS

Industry 4.0 smart solution (2019-21)
Data collector firmware - Real-Time Cloud Sensors Dashboard - Alert Manager - Micro-MES

PLC simulator prototype (2020)
ESP32 - several sensors - potenciometers - status indicators LEDs - Buttons - MODBUS TCP

Scientific Initiation (2018)
Image Processing with Matblab in a Scientific Initiation Research Program

Scientific Initiation (2016-17)
Data Compression with Python in a Scientific Initiation Research Program

Lego Printer 2D in java (2018)
Software in JAVA for 2D printer built with LEGO

PROFILE

Currently i'm a professional dedicated to participating in the elaboration, execution and delivery of Technology and Innovation projects.

My professional career is one of maturing attitudes and thinking. I love technology! And i study and read a lot every day, including as a hobby.

In addition to my current time as a technology engineer, I have been a volunteer professor of physics and math in popular courses in Brazil (2016-2017) in order to give people the opportunity to study at public universities.

Regardless of where i work, my principles are honesty above all, dedication and respect for everyone.

CURRENT EDUCATION

NANODEGREE IN SELF-DRIVING CARS
UDACITY | 2021 - until now

CURRENT EXPERIENCE

IOT TECH LEAD
HVAR Consulting | Mar 2019 - Until now

- IOT Tech Lead | Nov 2019 - Until Now
- Data Engineer | Mar 2019 - Oct 2019

Smart Solution for Industry 4.0 (Nov 2019 - Mar 2021)

- **Tech Lead:** Sensoring Project for Injection and Extrusion Machines coupling with Big Data proccess for 4.0 Industry.

  Development and deployment of a software for IOT Gateway for real-time monitoring of the extrusion and injection machines through integration with PLC's (Programmable Logic Controllers), OPC's (Open Platform Communication) and GCP (Google Cloud Platform).

  Elaboration of an cloud architecture to show real-time dashboards of all machinery operation, apply machine learning models to find best machine configurations and practice predictive maintenance.

  Perfmormed roles of IIOT Technical leader, solution architect, software developer and software engineer.

  Milestones:

  -> Delivery of embedded software for Industrial IOT Gateway with the following capabilities:

  * Modbus TCP communication with PLC
  * Automation of the OTA process
  * Automation of the entire process to prepare a new linux image for the gateway
  * Real-time communication with the Google Cloud Platform (Iot Core + PubSub)
  * Real-time dashboard at the Google Cloud Platform (latency less than 1 second)
  * Optimization of payloads size (focused on reducing the need for traffic bandwidth and costs)
  * Multi-Thread software
  * **Tools**: Python, Linux, OTA, google Cloud Platform

-> Delivery of the initial version of a manufacturing execution software (MES) focused on Machine Status and OEE metrics:

* Event-driven
* NoSQL Database of high throughput
* SAP integration
* Google Cloud Platform integration
* Management of operational alerts for industry
* Management of Production Execution
* Real-time OEE Metrics computation: Performance, Availability and Quality
* **Tools**: Mongodb, Golang, Websockets, Vue.js

-> Delivery of a PLC simulator prototype to validate our softwares developed (Gateway, MES and Cloud Dashboard):

* Prototype built with ESP32 (Espressif)
* Potenciometers to simulate some sensors
* LEDs to indicate network connection
* LEDs to indicate incoming modbus requests
* Button to simulate start/stop at the items counting sensor
* Interruptions and Modbus TCP communication
* **Tools**: C++

Azure Real-Time Monitoring (Mar 2019 - Oct 2019)

- **Project Lead:** real-time monitoring application for Microsoft Azure Services. Highly scalable application with kubernetes and nodejs in sinergy with azure services (Completed Project).
- **Tools:** Nodejs, Docker, NGINX, Azure EventHub, Azure Data Lake, Azure Kubernetes Service, Azure Virtual Machines, Azure CosmosDB...

FAPESP TT4 RESEARCHER
Evoy.io | Apr 2018 - Feb 2019

- Developed a system for Industrial Packaging Management (using IOT)
- Implemented and improved DevOps practices
- IOT Data processing and Data Analysis
- **Tools**: Angular, Nodejs, MongoDB,Docker, AWS, Python, IOT (Sigfox Network)

WEB DEVELOPER
Federal University of ABC | Sep 2017 - Mar 2018

ERP SYSTEM DEVELOPMENT COORDINATOR
Alcateia Engenharia de Sistemas | Sep 2013 - Dec 2014

TRAINEE
Ernst & Young | Oct 2012 - Jul 2013

ERP SYSTEM DEVELOPMENT COORDINATOR
Alcateia Engenharia de Sistemas | Jan 2011 - Oct 2012

EDUCATION

SCIENCE AND TECHNOLOGY BACHELOR
Federal University of ABC | Brazil - ABC Region | 2016 - 2019

SYSTEMS ANALYSIS AND DEVELOPMENT
Education, Science and Technology Federal Institute | Brazil - São Paulo | 201 - 2014

ADVANCED PROGRAMMING TOPICS IN C
University of São Paulo | 2016 - 2016

PROBABILITY AND STATISTICS TOPICS
University of São Paulo | 2015 - 2015

AWARDS

SECOND BETTER SCIENTIFIC INITIATION WORK - 2017 FEDERAL UNIVERSITY OF ABC
Awarded in 2nd place at the 10th Scientific Initiation Symposium with the presentation of the work "Data Compression Techniques for Introduction to Computing", in the Communication and Information axis.