Miguel Pinto

ENGINEER IN THE MAKING

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Education

Faculty of Engineering of the University of Porto   *Porto, Portugal*
INTEGRATED MASTER IN INFORMATICS AND COMPUTING ENGINEERING, 18.01/20   *July 2022*
- Currently enrolled in the 4th year and member of NIAEFEUP, an organization composed by Informatics and Computing Engineering students.

Experience

INESC-TEC   *Porto, Portugal*
RESEARCH ASSISTANT   *July 2019 - Present*
- Currently developing a distributed application for P2P energy trading in microgrids, taking into account the grid's maximum flow capacity.
- Responsible for planning, designing and implementing the system in an Ethereum blockchain, programming smart contracts in Solidity.
- Using Python and GraphQL to develop swift economic clearing algorithms.
- Using React (emphasis on Hooks), Redux-Saga and Web3.js for the application's interface and Truffle Suite - Truffle, Ganache and Drizzle for automated testing and launching smart contracts to the blockchain. Hosted on a Google Cloud VPS.

Faculty of Engineering of the University of Porto   *Porto, Portugal*
TEACHING ASSISTANT   *October 2020 - Present*
- Assisting the teacher during the practical classes of LCOM - Computer Laboratory and clarifying any doubts that the students may have.
- The course unit aims to endow students with the knowledge and the skills required to program in the C language (using C++ as a reference) and develop low level software and embedded software for computer peripherals.

Critical Software   *Coimbra, Portugal*
SOFTWARE ENGINEER INTERN   *July 2020*
- Learned about the methodologies and tools used in designing robust distributed systems for critical projects, such as software for airplanes, trains and banks.
- Took part in several workshops for hard and soft skills. For example, building a real time chat service using Java and Kafka and building an automatic encryption/decryption system for smart meter data with Java, SSL and XML documents.

IKEA Industry Portugal   *Paços de Ferreira, Portugal*
ENGINEER INTERN   *June 2019 - August 2019*
- Planned and thoroughly studied the implementation of a computer vision system reinforced with machine learning to detect missing components on packaging lines.
- Developed testing scripts using Python and open source computer vision libraries like OpenCV.

Projects

Distributed Backup Service for the Internet
- Developed a distributed P2P system in Java with the purpose of backing up, in other peers, files divided in chunks.
- Takes resistance to faults, stability and scalability into account by using the Chord Protocol. Also takes advantage of secure communication channels with JSSE. Achieves high degrees of concurrency and parallelism by usage of thread-pools and non-blocking I/O.

Covid Forecast Tool
- Developed and trained several regression models with the goal of successfully predicting Covid-19 cases and deaths
- Used Neural Networks, Stochastic Gradient Descent, Support Vector Machines, K-Nearest Neighbours and Random Forest.
- Developed with Python, Jupyter Notebook, SKLearn, Pandas, Numpy, Matplotlib, Seaborn and Kaggle datasets.

OpenCX
- Developed an open source mobile app that provides swift navigation between key spots in a conference, through the use of an interactive map.
- Development using Flutter, Redux, SQLite, Google Maps' API and GPS technology.

Skills

Technical C/C++, Python, Java, JavaScript, GraphQL, Solidity, Dart, PHP, React, Redux, Flutter, Docker, Truffle, Drizzle, Ganache, OpenCV, SKLearn, Pandas, Numpy, Graphene, HTML5, CSS, SQL, Git, SVN, Kafka, GNU/Linux, WebGL, ARMv8, OOP, Agile, Scrum

Languages Portuguese (Native), English (Full Professional Proficiency), Spanish (Limited Working Proficiency)