Miguel Pinto

ENGINEER IN THE MAKING - PORTO, PORTUGAL

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Education

Faculty of Engineering of the University of Porto ⤢   *Porto, Portugal*
INTEGRATED MASTER IN INFORMATICS AND COMPUTING ENGINEERING, 18.04/20   *September 2017 - June 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.
- Planned, designed and implemented the system in an Ethereum blockchain, programming smart contracts in Solidity and testing them with Truffle Suite.
- Developed swift economic clearing algorithms using Python and GraphQL.
- Built a fluid exchange-style web app using React/Redux (emphasis on Hooks). Hosted on a Google Cloud VPS with Nginx.

Faculty of Engineering of the University of Porto ⤢   *Porto, Portugal*
TEACHING ASSISTANT   *October 2020 - January 2021*
- Assisted the teacher during the practical classes of LCOM - Computer Laboratory at FEUP.
- Helped the students regarding programming in C and developing 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.
- Built a real time chat service using Java and Kafka.
- Built 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, reducing their occurence by up to a predicted 95%.
- Developed testing scripts using Python and open source computer vision libraries like OpenCV.

Projects

SHEN: Self-healing extensions for Node-RED ⤢
NODE.JS, NODE-RED, DOCKER, MOCHA, STRYKER, SENTRY, GITLAB CI/CD
- Currently team leader of a Scrum team of 9 developers working on an open source project for a FEUP student's PhD thesis.
- Developed 12 nodes (working on more) that provide error detection and self-healing mechanisms for Node-RED, a flow-based development tool for visual programming in IoT systems.
- Released in the form of an npm package and Docker image with around 100 monthly downloads.

Distributed Backup Service for the Internet ⤢
JAVA, JSSE, SHELL
- Developed a distributed P2P system with the purpose of backing up files divided in chunks in other peers.
- Protected the system against faults and raised its stability and scalability by using the Chord Protocol.
- Implemented secure communication channels and achieved high degrees of concurrency and parallelism with thread-pools and non-blocking I/O.

Covid Forecast Tool ⤢
PYTHON, JUPYTER NOTEBOOK, SKLEARN, PANDAS, NUMPY, MATPLOTLIB, SEABORN, KAGGLE DATASETS
- Developed and trained several regression models that predicted Covid-19 cases and deaths with 90% accuracy.
- Compared several Machine Learning algorithms, such as: Neural Networks, Stochastic Gradient Descent, Support Vector Machines, K-Nearest Neighbours and Random Forest.

Skills

Technical	C/C++, Python, Java, JavaScript, SQL, GraphQL, Solidity, Node.js, Git, Docker, GNU/Linux
Languages	Portuguese (Native), English (Full Professional Proficiency), Spanish (Limited Working Proficiency)