Diogo Silva

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EXPERIENCE - PrtAF Academy

- **Software Engineer, 2016 onwards**
  - **Lead software development** on all projects since 2016: tooling for UAV operation and testing (onboard computers and fullstack systems on the ground), video and data distribution, data analysis, communication with internal and external partners (national and international).
  - **Developed** service to centralize and display data from distributed UAVs, running ROS environments. Used Nginx, Python & Flask for the central server; FFmpeg for dealing with video; added authentication and granular authorization for each resource (telemetry, video feeds); display was implemented as a web front-end (JS, jQuery, HTML, Bootstrap).
  - **Replaced** a legacy C++ library with a Python equivalent, accelerating implementation of new features, used in multiple national and international projects (e.g. sunnyproject.eu, firefront.pt, PERSEUS).
- **Teacher, Fall 2016 onwards**
  - Taught C programming to over 60 first year engineering students, for over 5 years.
  - 2017 - Supervised MSc dissertation on implementation (Python, ROS, OpenCV) of HUD display to aid in UAV manual landing.
  - 2021 - Supervised MSc dissertation on closing control loop with computer vision for target tracking (Python, ROS).
- **Soft skills roles**
  - Officer Commanding: managed and coached over 100 students since 2018.
  - Leadership instructor since 2016.

CONSULTANT

- 2021 - Developed microservice that interacts with Wordpress website and Ethereum blockchain; developed and deployed Ethereum smart contract (Python, Flask, gunicorn, MySQL, Redis, Docker).
- 2021 - Fintech - Developed a REST API for deployment of ML model, with parallel processing (Python, Flask, Dask, gunicorn, scikit-learn, Docker).
- 2018 - Developed REST API for deployment of Neural Network model (Python, Flask, Tensorflow, Docker).

SKILLS

- **Languages** Python ($\geq$ 2013), C, Javascript (front-end, $\geq$ 2016), Elm (personal projects, $\geq$ 2021), SQL (mostly ORM).
- **Tools & Frameworks** Docker, Flask, ROS (Python, C++), Scikit-Learn, Keras, Tensorflow, NumPy, Pandas, Dask, OpenCV, Git, RabbitMQ, NoSQL (personal projects, Firestore, MongoDB)

EDUCATION

- **Applied Artificial Intelligence and Machine Learning - Post-Graduate Degree**
  2022, ISEG Executive Education
  Ongoing. Covers: Supervised and Unsupervised ML, time series, privacy preserving AI/ML, deep learning, production and deployment.
- **Self Driving Car Engineer Nanodegree**
  2017-2018, Udacity
  A 9 month long, project driven course covering computer vision, neural networks, sensor fusion, navigation, among other topics, culminating with international teamwork on a software stack deployed to a real vehicle that drove on a test track.
- **MSc. Electrical and Computer Engineering**
  2009-2015, Prt Air Force Academy & Instituto Superior Técnico (IST)
  Dissertation Using Python, NumPy and a JIT compiler framework to accelerate computation, I implemented K-Means and Boruvka's algorithms for the GPU, and created a library that allowed Evidence Accumulation Clustering algorithm to run efficiently in larger than memory datasets (over 20GB). Published in 5th ICPRAM, 2016.

AWARDS & RECOGNITION

- Best Electrical Engineering student (2012, OGMA, Portuguese Aeronautic Industry Award)
- Honor Award for Out-standing Academic Excellence (2016, Armed Forces Communications and Electronics Association)
- Diploma for Academic Merit (2015, IST)
- Diploma for Academic Excellence (2016, IST)