Diogo Silva

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Lisbon, Portugal

EXPERIENCE - Air Force Academy

- **Software Engineer, 2016 onwards**
  - 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).
  - 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, CSS, Bootstrap).
  - 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).
- **Teacher, Fall 2016 onwards**
  - Taught C programming to over 60 first year engineering students, for over 5 years.
  - 2017 - Supervised master's dissertation work on implementation (Python, OpenCV) of HUD display to aid in UAV manual landing.
- **Soft skills roles**
  - Leadership instructor since 2016.
  - Managed and coached over 100 students in day to day operations since 2018.

SKILLS

- **Languages**
  Python (2013 onwards), C, Javascript (front-end, 2016 onwards), Elm (front-end, personal projects only, 2021), HTML, SQL (basic knowledge), NoSQL (personal projects with Firestore and MongoDB).
- **Tools & Frameworks**
  Docker, Flask (Python, web server, REST, websocket), ROS (Python, C++), Scikit-Learn (Python & ML), Keras / Tensorflow (Python NN), NumPy and Pandas (Python), OpenCV.

EDUCATION

- **Self Driving Car Engineer Nanodegree**
  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**
  2015, Prt Air Force Academy & Instituto Superior Técnico
  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 large datasets (over 20GB). Worked with larger than memory datasets.

AWARDS & RECOGNITION

- **Prt Air Force Academy**
  - Best Electrical Engineering student (2012, OGMA, Portuguese Aeronautic Industry Award)
  - Honor Award for Out-standing Academic Excellence (2016, Armed Forces Communications and Electronics Association)
- **Instituto Superior Técnico**
  - Diploma for Academic Merit (2015, IST)
  - Diploma for Academic Excellence (2016, IST)

PUBLICATIONS

- D. Silva, H. Aidos, and A. Fred, "Efficient evidence accumulation clustering for large datasets", in Proceedings of the 5th International Conference on Pattern Recognition Applications and Methods - Volume 1: ICPRAM,, pp. 367–374, 2016.