Daniel da Silva

mail@danieldasilva.org danieldasilva.org

Work Experience

Current – 2016
Scientific Software Engineer at NASA/GSFC (Contractor: TVS)
MMS Mission, a High Earth Orbit Sun-Earth System Satellite
Lead development of web/kiosk-based operational monitoring dashboard for the FPI instrument onboard MMS, which became a staple of the operational team's daily procedures for the primary instrument on a $1B space science mission. Mentored other engineers regarding new technologies as they adopted a SQL architectures and Python, while serving as the go-to guy for Python questions. Developed neural network methods for use in space science plasma instrumentation, allowing for exciting circumvention of model limitations long thought unavoidable.
Technologies: Python, Keras, NumPy, Pandas, Django, React, NodeJS, MySQL, Flask, Plotly, NumPy, Matplotlib, SciPy, HDF5, HTML, CSS.

2015-2017
Scientific Software Engineer at NASA/GSFC (Contractor: TVS)
ICESat-2 Mission, an Earth-observing Lidar Satellite
ICESat-2 is a Lidar Satellite for building a time-dependent topographic map of the ice sheet. I developed the early low-level scientific instrument processing code in Python and C, and was responsible for the majority of the pre-launch calibrations. As a junior engineer, identified and reported what became one of the top 5 mission level risks at the time of my departure.
Technologies: Python, C, NumPy, SciPy, Photon-Counting Lidar

6/2014-7/2015
Software Engineer at NASA/GSFC (Contractor: Telophase)
Earth Obs. Sys. Data Information Services Project (GES DISC, Code 610.2)
Software engineer writing subsystems for remote sensing scientific infrastructure at the GES DISC at NASA GSFC in backend and frontend. Researched search engine algorithms for in-house NASA's scientific remote sensing dataset promotion applications and acted as chair of the NASA ESDS Search Relevancy Working Group delivering to NASA H.Q..
Technologies: Python, JavaScript, NumPy, Matplotlib, HTML, HDF5, NetCDF

9/2013-2/2014
Full-Time Software Engineering Intern at Ubidots
Designed and tested code to develop web-based sensor device monitoring dashboards for internet-of-things applications. Designed map-reduce algorithms to calculate statistics on clients' sensor time series datasets. Extended the capabilities of the platform to provide automatic anomaly-triggered requests to user-generated HTTP endpoints.
Technologies: Python, Django, Javascript, CSS

9/2008-5/2013
Mixed Full/Part-Time Engineering Aide at NASA/GSFC (Civil Servant)
Earth Obs. Sys. Data Information Services Project (GES DISC, Code 610.2)
Designed and implemented a series of area-specific web-based services for the visualization of data from NASA earth satellites and instruments, including Aqua, Terra, Aura, MODIS, OMI, AERONET, and SeaWIFS.
Technologies: Python, Javascript, Android, Phonegap, Flask, jQuery, HDF5, NetCDF

Summer 2009, 2010
Summer Intern at Google, Inc
Google Maps at Google Headquarters
Development of prototype application for Google Maps to display floor plans on the interior of buildings. Product (not code) now in production in Google Maps. Technologies: Python, App Engine, Java, GWT, Google Maps API, Spatial Databases, JavaScript

Summer 2008
Summer Intern at NASA/GSFC (Catholic University of America)
Earth Obs. Sys. Data Information Services Project (GES DISC, Code 610.2)
Development of regridding service for Earth science dataset intercomparison.

Skills and Interests

Skills:	Machine Learning, Software Architecture, Database Design
Ecosystems:	Linux, Python, Java, C, MySQL, Frontend (JavaScript, HTML, CSS), React, XML
Other:	HDF5, NetCDF, Lidar, Apache Spark, Android, Dask, App Engine

Open Source

- Provided 11+ C and Python bug fixes and contributions to the NumPy project
- Author of high-performance Python library for parsing CCSDS Data. The CCSDS format is used for many NASA and ESA missions for low-level telemetry, and often contains tightly packed bits to reduce downlink requirements.
- Author of a Android App (Scheme-Droid, Java) with 10,000+ downloads and a 5-star mode rating

Awards

- Jun 2015 **SESDA3, NASA/GSFC** Technical Excellence Peer Award
- Jun 2012 **Code 610.2, NASA/GSFC** Performance Award
- Jun 2010 **Code 610.2, NASA/GSFC** Performance Award
- Dec 2009 **Google** Student Scholarship ($10,000)

Education

Bachelors of Science in Mathematics, **University of Maryland, College Park**
4.0 GPA in last 26 credits, including courses at other institutions. Computer Science: Data Structures and Analysis, Computer Architecture, Concurrent and Object Oriented Programming, Discrete Structures, Signal and Image Processing, Programming Languages