

Andrew August

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PROFESSIONAL EXPERIENCE

Capella Space

Remote

Data Scientist

05/2022 – 05/2023

- Developed analytics products for a mid-sized startup that specializes in collecting and selling high resolution synthetic-aperture radar imagery.
- I collaborated with our product team to scope a marketable vehicle detection model, then worked with external service providers to curate a training set of approximately 40,000 labels. I made a pre-processing pipeline to de-speckle, equalize, crop and otherwise standardized our data, then adapted open-source code to train a model.
- I conducted experiments to assess the impact of meta-features on model performance, focusing on factors such as incidence angle, energy polarization, noise amplitude, sensor version, ground sampling distance, and geography. My work identified areas requiring additional data collection, tailored processing or modeling.
- Consistently prioritized clear and effective communication—when communicating with product & marketing managers I emphasized high-level, concrete details. When communicating with engineers I emphasized technicals. When coding I designed intuitive APIs and documented them clearly with READMEs and docstrings.

Pacific Northwest National Lab

Seattle, WA

Data Scientist

05/2018 – 05/2022

- Developed solutions across a range of projects in science, security and energy. My primary focus was on 1) leveraging machine learning to enhance scientific understanding and 2) investigate the security vulnerabilities inherent in machine learning models.
- Project areas I worked on included adversarial machine learning, remote sensing, few shot learning, optical character recognition, hurricane modeling, HVAC simulation, molecular imaging, and wind simulation. My deliverables consisted of publications, software, and presentations to funding sponsors.
- Adapted open-source code to work with in-house datasets, or if code was unavailable I implemented methods directly from publications.
- Managed in-house GPU servers—monitored Docker resources, installed CUDA & python libraries, coordinated physical restarts, etc.
- Networked to become an ML point-of-contact for researchers beyond my immediate group. For example, I advised or contributed to projects in groups such as Coastal Sciences, Nuclear Engineering, and Building Energy.
- Promoted to Data Scientist after 8 months of consistent output and positive feedback as a Research Associate.
- Contributed to workforce development through mentoring interns & junior staff, on-boarded new hires, and conducted interviews.
- Acquired TS/SCI security clearance and worked in a SCIF.

Internships

- **Oak Ridge National Lab** (05/2017 – 08/2017): Worked in the Geospatial Analytics group and trained deep learning models for automated mapping applications using tools such as QGIS, Keras, and GDAL.
- **Sandia National Lab** (02/2010 – 08/2010): Developed fluid dynamics simulations for algae biofuel research. Verified simulations against physical experiments and developed differential equation models of algae growth, which I implemented in Fortran. My work led to a conference poster and contributed to an internal report.

TOOLS

Languages: Python (highly proficient), C (some), Javascript (some)

ML: torch, keras, tensorflow, sklearn, mlflow, weights & biases

Data: numpy, scipy, pandas, torch, gdal, rasterio, geopandas

Collaboration: Jira, Confluence, Github, Gitlab, Bitbucket, Slack, Teams, Mattermost

Misc: Docker, AWS, Conda

EDUCATION

University of Tennessee

Knoxville, TN

MS Computer Science

2015 – 2017

University of Hartford

Hartford, CT

BS Physics (summa cum laude)

2006 – 2009

PUBLICATIONS

- Differentiable Parametric Optimization Approach to Power System Load Modeling, *NeurIPS*, 2021
- Deep Learning Experiments for Tropical Cyclone Intensity Forecasts, *Weather and Forecasting*, 2021
- Systematic Evaluation of Backdoor Data Poisoning Attacks on Image Classifiers, *Computer Vision & Pattern Recognition*, 2020
- Koopman approaches to physics-informed machine learning for sea-surface temperature forecasting, *arXiv*, 2020
- Design optimization for a wearable detector array with directionality estimation, *Nuclear Instruments & Methods A*, 2017
- Spectroscopic Signatures of Dynamic Biological Processes in Algal Communities, *Sandia Report*, 2012