

Andrew August

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SUMMARY

Experienced Data Scientist specializing in data-driven modeling for pattern discovery. One year of experience at a geospatial startup focusing on computer vision. Four years of experience at a government R&D lab focusing on machine learning security. Currently seeking a new opportunity after team was laid off due to budget cuts.

TOOLS

Languages: Mostly Python

Libraries: ML frameworks (torch, sklearn, mlflow, etc), geospatial frameworks (gdal, rasterio, geopandas etc), visualization (matplotlib, plotly, etc)

Collaboration: Atlassian products (Jira, Confluence)

EXPERIENCE

Capella Space

Data Scientist

Remote

05/2022 – 05/2023

- Developed analytics products for a mid-sized SAR remote sensing startup. I focused on dataset curation and object detection; curated a training set of 40,000 labels by working with external service providers, then trained models by modifying open source code to work with our data.
- Tracked model performance using weights & biases and iterated on data cleaning and accuracy improvements through methods such as data augmentation and hyperparameter optimization.
- Collaborated with the product team to design marketable models and worked with a project manager to establish deadlines and deliverables.

Pacific Northwest National Lab

Data Scientist

Seattle, WA

05/2018 – 05/2022

- Developed ML solutions for projects in science, security, and energy. Example areas include adversarial machine learning, object detection for remote sensing, few shot learning, optical character recognition, hurricane intensity modeling, commercial HVAC simulation, and differentiable rendering.
- Implemented novel architectures and training protocols to answer research questions related to ML security, particularly adversarial ML, including attacks such as data poisoning, model manipulation, and black-box.
- Networked to become an ML point-of-contact for researchers outside 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 and junior staff, on-boarding new hires, and conducting interviews.
- Implemented ML solutions from academic papers.
- Acquired TS/SCI security clearance and worked in a SCIF.

Internships

Research Intern

- OAK RIDGE NATIONAL LAB (05/2017 – 08/2017): Worked in the GIS group, trained segmentation models for automated mapping applications using tools such as QGIS, Keras, and GDAL.
- SANDIA NATIONAL LAB (02/2010 – 08/2010): Developed fluid dynamics simulations in fortran to support algae biofuel research. Verified simulations against physical experiments and developed differential equation models of algae growth.

University of Tennessee

Graduate Research Assistant

Knoxville, TN

08/2015 – 12/2017

- Acquired experience working with large datasets and training deep learning models on multispectral imagery.
- Teaching assistant for the Machine Learning class.

EDUCATION

University of Tennessee

MS Computer Science

Knoxville, TN

2015 – 2017

University of Hartford

BS Physics (summa cum laude)

Hartford, CT

2006 – 2009

PAPERS

- 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