Andrew August

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Summary

I recently graduated with a MS in Computer Engineering from the University of Tennessee. At school I focused on machine learning and applied deep learning to classify objects in satellite images. I've interned at two national labs and completed advanced coursework in Computer Science, Physics, and Math. My near-term career goals are to apply my skills in industry and grow my capabilities as a machine learning developer.

Internships

Oak Ridge National Lab

Oak Ridge, TN

I developed computer-vision scripts to identify buildings in satellite images. *Summer 2017*

- I worked in the Geographic Information Science & Technology group (GIST).
- I trained deep convolutional neural nets on NVIDIA DGX-1 servers using keras.
- I developed a pipeline in python to preprocess →train →predict on images.
- I used GDAL to manipulate geotiff files.
- My code continues to be part of the lab's internal repository.

Sandia National Lab

Livermore, CA

I ran simulations to help my group design algae growth chambers. *Spring, Summer 2009*

- I worked in the Thermal/Fluid Science & Engineering group.
- I simulated fluid-dynamics and water-quality to characterize the growth of algae.
- I validated simulations against physical experiments.
- I determined the effect of design parameters on growth rates.
- My work appears in two internal reports and one conference poster.

Graduate Projects

Master's Project

Knoxville, TN

I trained deep convolutional neural nets to classify land-use in satellite images. *Spring, Summer 2017*

- I fine-tuned VGGNet and ResNet architectures using keras.
- I optimized hyperparameters and experimented with sample-size distributions.
- I developed a hierarchical modeling scheme and combined predictions from multiple classifiers.
- My work earned me a MS in Computer Engineering.

Research Assistant

Knoxville, TN

I helped design a wearable detector array capable of localizing radiation sources. *Summer, Fall 2016*

- I characterized the localization ability of various designs by computing Bayes error rates.
- I computed Bayes error rates by numerically integrating a 6-dimensional equation in Matlab.
- My work appears in two publications.

Education

MS Computer Engineering

Knoxville, TN

University of Tennessee (Computer Vision lab) *2015-2017*

Grad Student Physics

Albuquerque, NM

University of New Mexico (Incomplete degree, transferred to CS) *2010-2014*

BS Physics

Hartford, CT

University of Hartford (Summa cum laude) *2006-2010*

Programming

Favorite python libraries: keras, scikit-learn, scikit-image, multiprocessing, matplotlib, gdal.

Language	Proficiency	Years
Python	★★★★★★	4
Matlab	★★★★★	6
PySpark	★★★★	1/2
html, css	★★★★	4
Bash	★★★	3
Javascript	★★	1
SQL	★★	1/2
R, PHP, C	★	1/2

Reports and Publications

- *Design optimization for a wearable, gamma-ray and neutron sensitive, detector array with directionality estimation*. Nuclear Instruments and Methods in Physics Research Section A, 2017.
- *Bayesian Approaches for Characterizing Directionality of Radiation Detector Array Configurations*. Nuclear Instruments and Methods in Physics Research Section A (in review).
- *From Benchtop to Raceway: Spectroscopic Signatures of Dynamic Biological Processes in Algal Communities*. Sandia National Lab Report, 2012.
- *Growth Kinetics, Validation, Verification, and Sensitivity Study of an Algal Growth Model*. Sandia National Lab Report, 2011.

Other Activities

Workshop Attendance

- *Geo AI: Deep Learning for Geographic Knowledge Discovery* at SIGSPATIAL 2017 GIS conference.
- *High Performance Computing with Spark*. Hosted by Pittsburg Supercomputing Center & UT National Institute for Computational Sciences, 2017.

Teaching

- High school outreach computer science instructor, 2015.
- Teaching assistant for four years in computer science and physics.

Hobbies

- Mountain biking, swimming, skateboarding, programming, poker, guitar.