ALLIOT C. NAGLE

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EDUCATION

University of Wisconsin-Madison Sept. 2019 – Present
MS Electrical Engineering, Expected Fall 2021 Madison, WI

University of Wisconsin-Madison Sept. 2014 – May 2019
BS Electrical Engineering Madison, WI

RESEARCH EXPERIENCE

Graduate Researcher, University of Wisconsin-Madison Sept. 2019 – Present
Advisor: Dimitris Papailiopoulos Madison, WI

- Design and implement deep learning experiments in Python using the PyTorch framework
- Research focus is centered around sparsified and low-rank representations of neural networks

Algal Bloom Prediction & Modeling, University of Wisconsin-Madison Jan. 2018 – April 2020
Advisor: Dimitris Papailiopoulos Madison, WI

- Cleaned and analyzed data from Clean Lakes Alliance, NOAA, and NTL-LTER to form data set
- Apply PCA, kernel SVMs, k-nearest neighbor, random forests, logistic regression, and neural networks to the data to choose best model and gather insight about the behavior of algal blooms
- Utilize high-throughput computing for model training
- GitHub Repository: https://github.com/acnagle/CLA-Project

Undergraduate Researcher, University of Wisconsin-Madison May 2017 – Aug. 2017
Plasma Processing Technology Lab Madison, WI
Advisor: J. Leon Shohet

- Modeled surface potential of silicon wafers with thin films in MATLAB
- Increased reliability of and significantly reduced Kelvin probe operation times
- Wrote a technical paper explaining the physics and principles of the Kelvin probe

PUBLICATIONS

- *Optimal Lottery Tickets via SubsetSum: Logarithmic Over-Parameterization is Sufficient.* Ankit Pensia, Shashank Rajput, **Alliot Nagle**, Harit Vishwakarma, Dimitris Papailiopoulos. NeurIPS, 2020. Spotlight and poster. arxiv:2006.07990

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Wisconsin-Madison Sept. 2019 – Dec. 2019
ECE 331: Introduction to Random Signal Analysis and Statistics Madison, WI

- *Recipient of the ECE Gerald Holdridge Outstanding Teaching Assistant Award*
- Answer student questions during in-class activities and office hours. Engage with students in a flipped-classroom active learning environment to better facilitate their understanding of course content
- Responsible for reviewing and editing all in-class activities, homeworks, and quizzes, and then implementing them in Canvas, our online learning tool

Undergraduate Teaching Assistant, University of Wisconsin-Madison Sept. 2018 – Dec. 2018
ECE 330: Signals and Systems Madison, WI

- Answered students' questions in a flipped-classroom active learning environment in this second-level signal processing course
- Topics included Fourier Series, FT, DTFT, DFT, sampling, LTI systems, FIR filters, discrete and continuous-time systems, difference and differential equations

Undergraduate Teaching Assistant, University of Wisconsin-Madison Jan. 2018 – May 2018
ECE 203: Signals, Information, and Computation Madison, WI

- Answered students' questions in a flipped-classroom active learning environment in this first-level signal processing course
- Topics included complex numbers, convolution, LTI systems, Fourier Series, DFT, sampling, filtering, image processing

WORK EXPERIENCE

Data Science Intern, Elutions May 2019 – Aug. 2019
Delafield, WI

- Performed data cleaning and feature engineering for predictive maintenance and Remaining Useful Life models. Implemented predictive maintenance model as a binary classification task
- Developed scalable algorithms for automatically detecting air handling unit savings opportunities. Achieved savings of up to 72%
- Analyzed time series data for various proof of concept tasks

Hardware Engineering Intern, Thermo Fisher Scientific May 2018 – Aug. 2018
Madison, WI

- Designed the LED LightBar for the Nicolet Summit FTIR Spectrometer using Altium Designer
- Developed, fabricated, and tested functioning prototypes of the LED LightBar
- Collaborated with multi-disciplinary team of interns to develop the LED LightBar from conception to mass production
- Wrote a technical procedure for generating RoHS compliancy reports for PCBAs

TECHNICAL SKILLS

Programming Languages	Java, C/C++, MATLAB, Julia, Python (Sci-kit Learn, PyTorch)
Software & Tools	Amazon EC2, LaTeX, Altium Designer, Git, MS Office

SELECTED COURSEWORK

- CS 540: Intro to Artificial Intelligence
- CS/ECE/ME 532: Matrix Methods in Machine Learning
- ECE 729: Theory of Information Processing and Transmission
- CS 760: Machine Learning
- CS 761: Mathematical Foundations of Machine Learning

SERVICE

Poverty Alleviation Volunteer, Alternative Breaks (W.U.D.) March 2018
Cincinnati, OH

- Learned about the problem of gentrification and homelessness in Cincinnati, OH
- Provided service to those in need

Tutor and City Cleanup Volunteer, Alternative Breaks (W.U.D.) March 2017
Memphis, TN

- Maintained clean public and private property through trash pickup and urban gardening
- Tutored children in an after-school program

Urban Gardening Volunteer, Badger Volunteers March 2017
Madison, WI

- Completed outdoor and gardening work for an energy-sustainable community center and school (Badger Rock Middle School)

PERSONAL PROJECTS AND INTERESTS

E-bike May 2019 – August 2019

- Converted my bike into an electric-powered bicycle using a hub motor E-bike kit
- Designed and hand-built the 48V 13S5P battery pack using 65 lithium-ion NCA (nickel cobalt aluminum oxide) 18650 battery cells

Hobbies

- Reading, running, biking, weight training, cooking, and listening to or practicing music