GRETA KINTZLEY

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EDUCATION

Johns Hopkins University

Baltimore, MD | Jan. 2021 - Aug. 2024
M.S. in Data Science
GPA 4.0/4.0

University of Delaware

Newark, DE | Aug. 2015 - May 2019
B.E. in Electrical Engineering
B.S. in Applied Mathematics
GPA 3.98/4.0

SKILLS

Programming

Python | JavaScript

Libraries / Tools / Platforms

Pytorch | Pandas | scikit-learn | Keras/TensorFlow | LangChain | OpenCV | Vue | BeautifulSoup | Selenium | Cypher | Git | Docker | HuggingFace | Triton | Streamlit | Jupyter | Prefect | PostgreSQL | Celery

Machine Learning

Deep Learning | Transfer Learning | Feature Extraction | Sequence Learning | Ensemble Methods | Clustering | Transformers | Graph Attention Networks | LLMs | CNN | GAN | RNN | Decision Trees | SVM | NLP

RELEVANT COURSES

Advanced Applied Machine Learning
Theory of Machine Learning
Foundations of Neural Networks
Information Theory
Probability Theory and Simulation
Optimization
Statistical Models and Regression
Graph Theory
Data Visualization
Principles of Database Systems
Data Structures (C++)
Signals and Systems
Digital Signal Processing
Digital Image Processing

AWARDS & HONORS

- University of Delaware Distinguished Scholar (4 years of full tuition)
- IEEE-HKN Outstanding Student National Finalist
- President of Eta Kappa Nu (Electrical Engineering Honor Society)
- Department of ECE Faculty Award
- Department of ECE Alumni Award
- Peter J. Warter Scholarship (Math Dept.)
- Eleanor Rees Scholarship (Math Dept.)

WORK EXPERIENCE

Johns Hopkins University Applied Physics Laboratory

Data Scientist in the Analytic Capabilities Group — Laurel, MD | October 2020 – Present

- Designed and implemented a locally hosted chatbot giving sponsors access to LLMs on data-sensitive missions. Evaluated and selected open-source LLMs and deployed locally with NVIDIA TensorRT. Built out the prompt construction, memory management, and post-processing workflows.
- Developed a tissue classifier model to identify tissues from unknown mixed samples using an ensemble of One vs Rest and strategically selected One vs One random forests to enable multilabel classification across highly similar and imbalanced classes. Improved generalization and enabled more rigorous validation of model to varied collection procedures, sequencing technologies, and chemistries by identifying and incorporating publicly available genomic datasets.
- Led team of 6, responsible for daily delivery of the County Cases and Death data posted directly to the Center for Disease Control's (CDC) official Covid Data Tracker, used by policymakers and healthcare officials nationwide to inform critical decisions. Designed and implemented an automated COVID-19 time series data delivery pipeline, resulting in an 85% reduction in delivery time. Supported frequent meetings with state health departments to coordinate collection processes on behalf of the CDC. Guided CDC in their transition to weekly COVID data reporting by presenting detailed analyses of decision trade-offs.
- Ensured data fidelity and real-time availability for the widely recognized Johns Hopkins COVID Dashboard, working 3-4 on-call shifts biweekly over the course of two years to update web scrapers as their sources were updated. Project was awarded TIME Best Invention of 2020: 2020's Go-To Data Source; Team recognized by Fast Company as 2021's Innovative Team of the Year.
- Designed and led an interactive workshop on LangChain as part of a Generative AI Workshop Series, giving an audience of 150+ people hands-on experience in working with LangChain to integrate LLMs into their applications. Documentation and code were circulated widely across the laboratory and have been used as a reference for many getting started with LLMs.
- Led company-wide innovation challenge program focused on developing early-career staff members. Developed the 2023 challenge topic and planned a 6 month program involving 10+ staff development events for 50 participants from across all sectors of the lab. Efficiently managed a $950k program budget. Mentored two team leads one-on-one.

MIT Lincoln Laboratory

Signal Processing Engineer — Lexington, MA | September 2019 – October 2020

- Performed statistical analysis on large volumes of data to characterize features such as point spread functions of targets, distortion of cameras, and components of various focal planes, providing key insights for the development of new algorithms.
- Developed novel filtering technique for bad pixel suppression, cutting false alarms by 94%.
- Developed infrared raw imagery simulator for testing algorithms.

Medtronic

Intern in Surgical Innovations R&D — Boulder, CO | May 2018 - August 2018

- Developed novel algorithms for automatic detection of critical anatomy in laparoscopic video using OpenCV.

Johns Hopkins University Applied Physics Laboratory

Intern in the Advanced Concepts and Technologies Group — Laurel, MD | May 2017 - August 2017

- Designed and implemented a 2-D tracking system for infrared camera data in Matlab incorporating Kalman filtering, track association algorithms, image processing, & other computer vision techniques.

PERSONAL & COURSE PROJECTS

Deconvoluting Mixed Virus RNA Sequences with Graph Attention Networks (GATs)

- Designed a novel method for separating read fragments from a mixture of SARS-COV-2 virus sequences to enable early detection of emerging strains. Trained a GAT to create embedding vectors from a graph of reads from unknown sources, optimized to cluster reads by original source sequence. Achieved an Adjusted Rand Index of 0.86 on test mixtures, indicating strong consistency between clusters produced and original sources. Awarded best research paper in Adv. Applied Machine Learning class of 25.

Coding and Training a Transformer from Scratch

- Wrote a PyTorch implementation of a Transformer and trained it for English to Italian translation. Created custom model and configuration classes compatible with the Hugging Face Transformers library and hosted the trained model on Hugging Face.