Alex Ritchie

2201 Fairland Rd, Greensboro, NC
📱 : 336.509.9669 | ✉️: alex.ritchie.ml@gmail.com | 👥: linkedin.com/in/alexander-ritchie/

Innovative and technical Machine Learning (ML) expert pursuing opportunities to utilize strong leadership, technical, teamwork, and communication skills to solve complex problems and provide insight from data. Key accomplishments:

- Architected and developed Natural Language Processing (NLP) solutions at Amazon that have generated substantial business value
- Led technical efforts and managed several successful research projects that culminated in publications at top machine learning conferences

Work Experience

Amazon (Alexa Speech) - Applied Scientist Intern, Summer 2021
- Led development of a Transformer architecture for speaker identification
- Performed design, implementation, training, and analysis as solo developer on the project
- Delivered a percentage point increase in intra-home speaker ID accuracy via reduction of false positives

ExxonMobil - Electrical Field Engineer Intern, Summer 2017
- Led the upgrade and redesign of the control system for a key terminal of a major US pipeline
- Delivered system design, control logic, and oversaw on-site installation

Education

University of Michigan 2017 - Present
- **Ph.D.** in **Electrical and Computer Engineering (ML Track)**
  Expected Completion April 2025
  Advisors: Clayton Scott and Laura Balzano
- **MS** in **Electrical and Computer Engineering (ML Track)**

Georgia Institute of Technology 2014 - 2016
- **BS** in **Electrical Engineering**, *highest honors*

Skills

Technical: NLP, Deep Learning, Classical ML, Statistical Modeling, Generative Models, Data Analysis, Optimization
Programming: Python, C++, Matlab, Julia, Bash
Python Libraries: NumPy, Jax, SciPy, Pandas, Scikit-Learn, PyTorch, PySpark, NLTK, Jupyter Notebooks, Matplotlib
Tools/Data: Git, SQL, Linux, Tableau, Excel
Cloud (AWS): Sagemaker, Rekognition, DynamoDB, Glue, Kinesis
Professional: Communication, Problem Solving, Collaboration, Time Management, Decision Making, Critical Thinking

Selected Publications

Online Platforms and the Fair Exposure Problem Under Homophily. J Schoeffer, A Ritchie, K Naggita, F Monachou, J Finocchiaro, M Juarez. *37th AAAI Conference on Artificial Intelligence, 2023*

Consistent Estimation of Identifiable Nonparametric Mixture Models from Grouped Observations. A Ritchie, R Vandermeulen, C Scott - *Advances in Neural Information Processing Systems, 2020*

Visit My Github and Personal Website to Learn More

aritchie9590.github.io/ | github.com/aritchie9590