**Ethan Nelson**

GitHub: [einelson](https://github.com/einelson) ethanisaacnelson@gmail.com LinkedIn: [Ethan-Nelson](file:///C:\Users\ethan\Downloads\linkedin.com\in\ethan-nelson\) (770) 689-7042

**Machine Learning Engineer**

Machine Learning Engineer with experience designing and deploying scalable AI solutions, specializing in end-to-end machine learning optimization and automation. Proficient in Python, SQL, Spark, and deep learning frameworks such as PyTorch and scikit-learn. Skilled in developing and integrating NLP models, and ML pipelines to enhance operational efficiency. Strong background in big data processing, distributed computing, and cloud-based deployments (Azure, Databricks, Docker, Kubernetes, Pandas/Polars, Spark). Passionate about leveraging AI to drive business impact through automation, predictive analytics, and workflow optimization. Proven ability to coordinate efforts across multiple teams and lead team initiatives.

**PROGRAMMING AND TOOLS**

Proficient with Python, PyTorch, scikit-learn, MLflow, Spark, Docker, Databricks, Azure, Google Suite; Familiar with LaTeX, C++

**EXPERIENCE**

***Software Engineer, Machine Learning at Stukent****,* Remote Aug 2023 – Mar 2025

* Orchestrated the design and implementation of end-to-end machine learning pipelines and ML life cycle, resulting in 5 model endpoints to be served to over 40,000 users, and estimated **20% reduction in user churn** with risk analysis model.
* Headed architecture of automated workflows for the training, evaluation and deployment of machine learning models in production Databricks environments from the ground up, leveraging **MLflow** and **pyspark**.
* Developed and fine-tuned **NLP** algorithms in **PyTorch**, including **LSTMs** and **transformers**, implementing a real-time alert system for engineering teams on bug-related issues within the platform.
* Integrated large **language model (LLM)** to interpret student performance data dynamically, enhancing learning outcomes through adaptive model responses.
* **Led** team for company research initiative. Originally conducted research and proposed 10 machine learning methods to enhance platform functionality, resulting in building prototypes for 2 projects.

***Machine Learning Engineer at AmyAI****,* Remote Feb 2023 – Aug 2023

* Used generative AI models to improve communication between companies and customers by creating and deploying custom vector search **RAG pipelines** based on web scraped customer data.
* Deployed APIs in Microsoft Azure via **docker** + **Kubernetes**.
* Reached out to 75+ users to research pain points to better understand impact in product development.

***Senior Data Analyst at iProspect,*** *Remote* Jan 2022 – Aug 2023

* Increased efficiency in runtime over legacy application by ~250% through optimizing ETL pipelines.
* Addressed ad-hoc requests with a strong command of **Python**, **SQL**, and data transformations, revamping dashboards to enhance visibility of key performance indicators (KPIs) and streamline reporting processes.
* Built scripts to transform and join data to help case study dealing with 50% unattributed data points.

**MACHINE LEARNING PROJECTS**

**Key-Value Memory Network Final Project** Oct 2024

* Built a KV memory Network using **PyTorch** which learns to access data stored in a database; very similar to RAG.
* Generated a synthetic data training set and processed data with tokenization and multi-hot encoding.

**Fault Detection Capstone Project** Apr 2021

* **PCA** and **Clustering** (DBSCAN, K-means) to identify faults in chemical pipelines. Performed research on different clustering techniques and how different numbers of clusters affected results.
* Findings visualized into web app that included interactive 3D graphs

**EDUCATION**

**Georgia Institute of Technology***,* Atlanta, Georgia Apr 2025

*Master of Science (MS), Computer Science; Interactive Intelligence*

**Relevant Coursework:** Natural Language Processing, Knowledge Based Artificial Intelligence, Machine Learning, Quantum Computing, Human Computer Interaction, Machine Learning for Trading, LLM seminar, Introduction to Research.

**Current Research:** Zero-Shot Classification in Student Question Optimization

**Brigham Young University-Idaho***,* Rexburg, Idaho Sep 2021

*Bachelor of Science (BS), Computer Science*

**Relevant Coursework:** Machine Learning and data Mining, Computer Vision, Databases, Data structures, Discrete Mathematics, Linear Algebra.