Aidan Andrews

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Education

University of Illinois at Urbana-Champaign
Bachelor of Science in Engineering Physics — *GPA: 3.9*
Bachelor of Science in Mathematics & Computer Science (Dual Degree) — *Expected 2027*

Experience

Startup (Signed NDA) — May 2024 – Aug 2024
Founding Machine Learning Engineer — *Remote*
- Engineered advanced NLP systems, optimizing Retrieval-Augmented Generation (RAG) and intent classification.
- Designed a novel "wavular" RAG approach and hybrid embedding-based classification system.
- Applied advanced techniques like vector space models, similarity metrics (cosine, Euclidean), and text representation methods.
- Managed large-scale NLP datasets with complex preprocessing, delivering innovative solutions for NLP challenges in resource-constrained environments.

NVRALONE — March 2023 – Present
FOUNDER, CEO, CTO — *Los Angeles, CA & Cedar Rapids, IA*

Amara Andrews Mayoral Campaign — May. 2022 – Nov. 2022
Mayoral Campaign Volunteer — *Cedar Rapids, IA*

Project Manager for CS124 Honors and Course Assistant CS124 — Dec. 2023 – May. 2024
Oversaw machine learning projects of current students. Taught and tutored CS124 students — *UIUC*

Extracurricular Activities

Division 1 College Ice Hockey — Sep. 2013 – May 2023
University Of Illinois Men's Division 1 Hockey

Machine Learning Research for Plastic Surgeon — Aug. 2023 – Present
Reasercher — *DAPS*
- Researched machine learning models to predict the effectiveness of procedures based off of a generalized score given to patients.

Chess — June 2019 – Present
Rated 2000 over-the-board. Training to become a FIDE Master — *Online/Over-the-board*

Projects

Climate Predict: Global Warming Calculator | *Rust*
- Completed a multi regression model in Rust. The project comprises 3 regression models: linear regression, polynomial regression, and random forest regression (incomplete).
- Used public NASA datasets to predict temperature change given CO2 emmisions.

Devanagari Language Learning App | *Python, Flask, TensorFlow, Keras, scikit-learn, Pandas, NumPy, Matplotlib*
- Engineered a Convolutional Neural Network (CNN) to accurately recognize natural handwritten language
- Enhanced model performance and accuracy through data preprocessing and augmentation techniques, ensuring robustness against diverse handwriting styles.
- Optimized training efficiency with back-propagation and gradient descent.

VoxAI: The Autonomous Learning Assistant | *Google Cloud Services, OpenAI API, Ubuntu, PyDub, Python*
- Engineered a full-stack Linux-based application on NVIDIA Jetson Nano, capable of recording, transcribing, summarizing, and extrapolating lecture content in real-time, tailored for enhancing lecture comprehension for increased study efficiency.
- Implemented llm with access to a database of all lecture transcriptions to curate study material, and answer questions.
- 3D printed and designed physical product.

Productivity App (notes, todos, calendar) | *React, Swift, AWS (lambda, amplify, gateway), Firebase, Typescript, JS, tailwind*
Portfolio Website | *React, AWS, Github API, Typescript, JS, tailwind, npm*

Technical Skills

Languages: Python, C++, Java, Kotlin, JavaScript, HTML/CSS
Developer Tools: Git, Linux (Arch and Debian), CLI, Docker, AWS (S3, lambda, amplify, route 53)
Data Structures: Trees (Binary and search mainly), Linked Lists (all types), Vector DB's, Graph DB

Other

Clubs/Organizations: James Scholar, National Society of Black Engineers (NSBE), Morrill Engineering Program (MEP)
Interesting Facts: I stream myself working (roughly 80 hours a week) on youtube, amassed over 10,000 followers and 1 million views, created a discord server with over 1,000 active members to help educate students and researchers
Current Courses: CS 225, PHYS 213, PHYS 214, MATH 257, STAT 400, PHIL 223