Aidan Andrews

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Experience

AI/ML Research Intern Nov 2024 – Present
AIFARMS National AI Institute & Center for Digital Agriculture *On-Site*
- Developing tools for LLM integration in production-scale chatbots, enhancing agentic workflows, which facilitated over 10,000 conversations and the efficient resolution of over 13,500 real-world problems.
- Implementing AI-driven solutions to increase the efficiency of current agricultural practices at scale.
- Building and researching agents, RFT, RAG, Reasoning, and pre/post training to advance AI capabilities in agriculture.

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 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*

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*

AI/ML Projects

Climate Predict: Global Warming Calculator | *Rust, Regression Models*
- Developed 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.

Projects

IlliniPlan: Student Course Scheduler and Degree Progress | *Postgres, React, Typescript, Tailwind*
- Developed algorithms for degree progress tracking, sequence validation, course recommendations, and search. Optimized database calls for performance.

IlliniSpots: UIUC Study Spot Finder | *Postgres, Firebase, Swift, React Native, Expo, Search*

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

Portfolio Website | *React, AWS, Github API, Typescript, JS, tailwind*

Education

University of Illinois at Urbana-Champaign
Bachelor of Science in Engineering Physics: AI/ML and Quantum Computing Track *Expected Graduation: 2026, GPA: 3.9*

Extracurricular Activities

Division 1 College Ice Hockey | *University Of Illinois Men's ACHA Division 1 Hockey*
Developed App for Plastic Surgeon | *Facilitates patient database management and surgical procedure simulations*
Chess | *Rated 2000 over-the-board, Training to become a FIDE Master*

Technical Skills

Languages in order of proficiency: C++, Python, TypeScript, Kotlin, JavaScript, Java
Developer Tools: Git, Linux, CLI, Docker, AWS, Pytorch, Tensorflow, Firebase, Transformers, HuggingFace
Data Structures: Trees , Linked Lists, Vector DBs, Graphs, Hash Tables

Other

Clubs/Organizations: James Scholar, NSBE, MEP
Interesting Facts: Streamed myself working 80+ hours a week on youtube with 11k+ followers, 1M+ views.
Own and run an educational and motivational discord server with over 1k members focused on CS, ML/AI, Math, Physics, education, and overall life.