

# Aidan Andrews

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## 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

## 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.

### AAXIOM.org — My Startup Portfolio

March 2023 – Present

FOUNDER, Sole Developer

- NVRALONE peaked at \$10K/month in profit, IlliniPlan over 1k active users, and Voxed 10k+ users (survey estimate).

## 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 emissions.

### 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.

### Voxed.ai — AI Powered Notebook | Google Cloud Services, OpenAI API, Ubuntu, PyDub, Python

- Developed full-stack AI app that allows users to take notes, write code, and synthesize long form content via LLM interaction. LLM capable of code generation, direct note interaction, tool use, and file toggling via RAG pipeline.

### Manim Video Agent — Worlds Most Accessible Tutor | Python, LLM, Pydantic, In-Context Learning, RL Fine-Tuning

- Developed an audio/video agent that can solve any problem and explain it using beautiful animations. Handles tool batching and parallelization, recursive error correction, state caching/resurrection, and phonetic TTS mapping.

### IlliniPlan.com — Student Course Scheduler and Degree Progress | Postgres, React, Typescript, Tailwind

- Over 1k active users, over 10k course schedules created, and over 100k course recommendations.

### Research Agent | Python, Langchain, LLM, RAG

### IlliniSpots — UIUC Study Spot Finder (IOS App) | Postgres, Firebase, Swift, React Native, Expo, Search

### VoxAI — The Autonomous Learning Assistant | Google Cloud Services, OpenAI API, Ubuntu, PyDub, Python

## 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

### BuildIllinois Cohort Team | Building and fostering startups at UIUC

## 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, Supabase, Postgres

## 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.