Aditya Ramesh

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Education

University of Illinois at Urbana-Champaign **Expected May 2026**
Bachelor of Science in Statistics and Computer Science (3.89/4.00) *Urbana-Champaign, IL*

Relevant Courses: Intro to CS I & II, Data Structures, Discrete Mathematics, Parallel Programming, Linear Algebra, Statistics I & II, Calculus III

Technical Skills

Languages: C/C++, Python, Java, SQL, Kotlin, R
Libraries/Frameworks: NumPy, pandas, Seaborn, scikit-learn, TensorFlow Keras, libtins, HuggingFace, LangChain
Developer Tools: Git, VSCode, DBeaver, Azure, AWS, Docker, Pytest, Postman

Professional Experience

University of Illinois at Urbana-Champaign **May 2024 – July 2024**
Machine Learning Intern

- Developed a **computer-vision** reliant trash/recycling classifier for UIUC, enhancing waste-sorting efficiency by 43%.
- Preprocessed over 17,000 images with **pandas/NumPy** for YOLOv9 **CNN** mode, allowing for 87% classification success.
- Highlighted data pipelines through **Matplotlib/Seaborn** to showcase project-development through agile methodology.

Discovery Partners Institute **May 2024 – July 2024**
Course Instructor

- Conducted CS 124 lectures for 130 under-privileged students, teaching object-oriented-programming in **Java** and **Kotlin**.
- Maintained a 93% attendance rate with a 35% year-on-year increase in student lesson completion & skill progression.

University of Illinois at Urbana-Champaign **August 2023 – May 2024**
OnSite Consultant

- Led the Student Technology Loan Program team delivering stellar inventory management, troubleshooting, and repair.
- Handled network management and disk restoration requests within 48 hours for enhanced student academic availability.

Projects

Confluence-Data Contextualized LLM Enhancement Tool **August 2024**

- Engineered a custom-LLM tool with **RAG** on **Confluence API** data through **LangChain**, enhancing query responses.
- Embedded textual inputs as vectors using **HuggingFace** to conduct semantic/lexical search with **Pinecone** Vector DB.
- Incorporated a locally hosted LLM with **Ollama** and a **Flask** API endpoint for coordinating front-end querying.

ML-Based Packet Anomaly Detector **July 2024**

- Developed a **C++** packet sniffer with **libtins** capable of 0.05 millisecond packet capture, parsing, and serialization.
- Transmitted data to **Python** using Circular Buffers in **Redis**, bolstered by the **GeoLite2 Web API** for location tracking.
- Processed inputs with **pandas** and trained a **scikit-learn** based **Isolation Forest** model, outputting anomalous activity.

AI-Enhanced Task Management Service **May 2024**

- Deployed a web-app with **Azure** and **PostgreSQL**, used to display an interactive task-logging dashboard for students.
- Modernized workflow with Azure **OpenAI**'s recommendation engine, providing personalized solutions to tasks.

Stock Prediction Platform **November 2023**

- Built a **LSTM-RNN** Model for stock prediction using **Keras**, removing Look-Ahead Bias to provide 81% accuracy.
- Preprocessed 8 years of data from **Alpaca Trading's API** through **pandas** and **NumPy**, used for sliding-window training.
- Integrated with front-end team through **Django** and **SQLite** for interactive web application showing predicted price.

Multi-Function Plant Health Monitor **April 2022**

- Created a monitoring tool using an **Arduino** and a sensor array to collect feature data on a plant's surroundings.
- Wrote **C++** logic to upload current condition and attributes to **Google Firebase** in under 50 milliseconds.
- Coordinated with front-end team to determine plant-health condition and display status on a **Flutter** written mobile app.