Aditya Ramesh

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Education

University of Illinois at Urbana-Champaign **Expected May 2026**
Bachelor of Science in Statistics and Computer Science *Urbana-Champaign, IL*

Relevant Coursework

- Intro to CS I and II
- Discrete Structures
- Data Structures
- Parallel Programming
- Linear Algebra
- Numerical Methods
- Statistics I and II
- Calculus III

Professional Experience

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

- Developing a **computer-vision** reliant trash/recycling classifier based on UIUC recycling specifications, resulting in enhanced waste sorting by 43% and fulfilled sustainability compliance.
- Preprocessing over 17,000 images with **Pandas/Numpy** for YOLOv9 **CNN** classification, allowing for 87% identification accuracy and exemplary object recognition performance.
- Engineering data pipelines from analytical insights found using **Matplotlib/Seaborn**, ensuring project can be comprehensively displayed on the ATLAS Website, enhancing program visibility and accessibility.

Discovery Partners Institute **May 2024 – Present**
Course Developer for Foundations in CS

- Integrating UIUC's Intro to CS Course for 130 Chicago-based students, enhancing under-privileged students' access to foundational computer science education.
- Coordinating efforts with the Grainger Engineering Department to provide greater access to university-level course material, resulting in a nearly 25% increase in content progression rates.

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

- Improved device documentation processes for the Student Technology Loan Program, resulting in more efficient inventory management, better device service, troubleshooting, and retrieval.
- Handled networking management and disk restoration requests within 48 hours, enhancing student academic availability.

Projects

ML-Based Packet Anomaly Detection **June 2024**

- Creating a **C++** packet sniffer, as a daemon process with the **libtins** library, to provide real-time packet collecting.
- Serializing for IPC transmission to a **Python**-written **DBSCAN** model, enabling anomalous packets clustering.
- Aggregating data into a **Redis** DB instance, for live-display on a Flask-implemented front-end.

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

- Deployed a web-app with **Azure** and **PostgreSQL** to improve academic habits through a task-logging service.
- Modernized workflow with Azure **OpenAI**'s recommendation engine, enhancing productivity with personalized solutions.

Stock Prediction Platform **November 2023**

- Built a **LSTM-RNN** Model for stock prediction using **Keras**, ensuring Look-Ahead Bias removal and 81% accuracy.
- Fetched 8 years of training data from **Alpaca Trading's API**, for time-series data normalization/preprocessing.
- Integrated with front-end team through **Django** and **SQLite** for interactive web application showing predicted price.

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

- Incorporated an Arduino with a sensor array to process feature data for a plant's surroundings (soil, humidity, etc.).
- Fed data to a **Flutter** front-end from a **Google Firebase** for real-time conditional sensor response using **C++**.

Technical Skills

Languages: C/C++, Python, Kotlin, SQL (Postgres), R
Libraries: Numpy, Pandas, Seaborn, Scikit-Learn, Tensorflow Keras, libtins
Developer Tools: Git, VS Code, DBeaver, Azure