

# ADITYA RAMESH

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## Education

### University of Illinois at Urbana-Champaign

*Bachelor of Science in Statistics and Computer Science*

**Expected May 2026**

*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 efficiency and improved sustainability compliance.
- Preprocessing over 17,000 images with Pandas/Numpy for YOLOv9 Neural Network classification, allowing for 93% identification accuracy and exemplary object recognition performance.
- Engineering data pipelines from data insights found using Matplotlib/Seaborn, ensuring project can be comprehensively displayed on the ATLAS Website.

### Discovery Partners Institute

**May 2024 – Present**

*Course Developer for Foundations in CS*

- Successfully integrating UIUC's Intro to CS Course for 130 Chicago-based students, enhancing under-privileged students' access to foundational computer science education.
- Increasing coordination efforts from the Grainger Engineering Department enabling greater access to university-level course material, resulting in accelerated year-on-year content-progression rates by near 25%.

### University of Illinois at Urbana-Champaign

**August 2023 – May 2024**

*OnSite Consultant for Technology Services*

- Refined device documentation processes for Student Technology Loan Program allowing for efficient inventory management with better device service, troubleshooting, and retrieval.
- Dispatched sub-48 hour networking/asset management and disk/file restoration requests, 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 personal academic discipline through task-logging.
- 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 avoidance of Look-Ahead Bias with 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 through a Google Firebase for conditional responses through C++ implemented logic.

## 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