Aditya Kumar

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SUMMARY

A Senior at the University of Arizona currently working as a Research Assistant @Pauli Lab.

EDUCATION

Master of Science, Computer Science, Accelerated master's Program, **Expected Graduation**: May 2025
Bachelor of Science, Computer Science with a minor in Statistics and Data Science, **Expected Graduation**: May 2024
University of Arizona, College of Science, Tucson, Arizona, **Cumulative GPA**: 3.971 out of 4.0
Highest Academic Distinction for the Academic Year [2020-21, 2021-22]

CORE TECHNOLOGIES & SKILLS

Languages/Libraries: Java, Python, C++, C, MySQL, JavaScript, HTML/CSS, SASS, NodeJS, Express, MongoDB, R, REST APIs, jQuery, NumPy, Pandas, Streamlit, Open3D
Technologies: AWS, Docker, YAML, Git, Maven, MATLAB, IBM Watson, Unity, Verilog, VIM

RELEVANT COURSE-WORK

Computer Science: Web Programming, Data Structures and Algorithms, Computer Organization, Software Development, Object Oriented Programming, Systems Programming and UNIX, Computer Security, Database Design
Mathematics: Calculus (I, II, and III), Discrete Mathematics, Linear Algebra, Introduction to Statistics

PROFESSIONAL EXPERIENCE

Student Software Developer and Researcher — April 2023 – Present
Pauli Lab – College of Agriculture and Life Sciences

- Collaborate with world-class scientists to develop high throughput phenotyping pipelines to handle data recorded by the world's largest plant phenotyping robot and drones. Primarily handle the creation of GeoJSON and GCP files for the functioning of the pipeline.
- Creating a visualization dashboard using **Streamlit** and other Python libraries that visualizes lab data collected by the pipeline over the last 3 years using **Plotly** and **Open3D**.
- Write YAML files for distributed data processing, and process data on the **High-Performance Computer** (HPC).

Senior Undergraduate Teaching Assistant — August 2021 – Present
Department of Computer Science, University of Arizona

- Conduct weekly office hours and supplemental instruction sessions for courses like CSC 101 (Introduction to Programming), CSC 144 (Discrete Math for Computer Science), CSC 210 (Software Development) and CSC 352(Systems Programming and UNIX).
- Partner with the professor for grading and preparing programming assignments and exams for a class of over 150 students. In addition to this, collaborate with them to develop innovative course content and improve course logistics.
- Actively mentor a team of 10 UGTAs to help them achieve their goals as a teaching assistant.

PROJECTS

Wordle 2.0 *(Demonstration video: https://youtu.be/f2A4npmqGxE)*

- Collaborated with an AGILE team of 4 developers to create a multi-modal, multiplayer version of this game using **Java's Swing Library**.
- Created a global leaderboard using **MongoDB Atlas** which was incorporated into the project using **Maven**.
- Thoroughly tested the code by using the **JUnit** library to provide a bug-free and reliable user experience.

Quickfeed Feedback System *(Demonstration Video: https://youtu.be/_dQ8GYfQ5V4)*

- Designed and developed the user interface using **HTML**, **JavaScript**, and **CSS** for a web application that provides real-time feedback to teachers.
- Built the client-side backend by using JavaScript and facilitated communication with the server by using **AJAX.**
- Collaborated in creating the server-side backend using **Node.js** and **Express**, and stored client-side data by creating a **NoSQL** Database with MongoDB.

Hotel 460 Database Management System

- Built a fully-fledged database complete with Normalization analysis using **JDBC** and **SQL**.
- Added advanced functionality such as Bill Creation, Member Points Tracking etc. in addition to standard AMD operations.

Image Classifier from Scratch

- Created a K-Nearest Neighbors Image Classifier in **C++** without using any ML Libraries.
- Designed the training and testing UI using **Qt**.