

# Aditya Kumar

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## **EDUCATION**

**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, C#, REST APIs, jQuery, NumPy, Pandas

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.
- Analyze canopy cover percentage of over 5760 plots for each scan date by writing a Python script using libraries such as NumPy, Pandas, GeoPandas, and OpenCV.
- Write YAML files for distributed data processing, and process data on the High-Performance Computer (HPC).
- Present recent accomplishments and current goals in weekly team meetings and send weekly reports.

### **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), and CSC 210 (Software Development).
- Partner with the professor for grading and preparing programming assignments and exams for a class of over 150 students.
- Partner with the professor and the course coordinator 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**

*Software Developer (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.
- Implemented an algorithm that analyzed each of the player guesses to rate how accurate and good they were.
- Thoroughly tested the code by using the JUnit library to provide a bug-free and reliable user experience.

### **QUICKFEED FEEDBACK SYSTEM**

*Front-End Website Developer (Demonstration Video: [https://youtu.be/\\_dQ8GYfQ5V4](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.
- Along with active feedback, at the end of each semester the teacher would get an email with a comprehensive summary of student feedback. This feature was made by using the Nodemailer module.
- 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.

### **SAVE-THE-ENVIRONMENT – AIR POLLUTION VISUALIZER**

*Full-Stack Developer (Project Repository: <https://github.com/Zeussssssss/SaveTheEnvironment>)*

- Engineered a qualitative visualization tool for a team project at the HackMIT hackathon that enabled the users to visualize a clear correlation between air pollution and the decline in the populations of various animal species by using heat maps.
- Created the web app by using basic web languages and implemented the map by using Google's Map API.
- Collaborated in analyzing data from various governmental sites like epa.gov and fwy.gov and made that data useful by using the Pandas data analysis library for Python.