

# Adi Mukundan

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## EDUCATION

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### University of Iowa

Iowa City, IA

*Bachelor of Science in Computer Science and Mathematics*

*Sep. 2021 – May 2025 expected*

*Master of Science in Computer Science*

*Aug. 2024 – May 2026 expected*

- Artificial Intelligence, Modeling, and Simulation Certificate
- Courses: Data Structures, Algorithms, Algorithms and Systems for Biomedicine, Artificial Intelligence, Networks

## EXPERIENCE

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### Bioinformatics Research Assistant - Singh Lab

Oct 2023 – Present

- Using text analysis on social media to understand drug use trends across a 10 year period
- Presented results in a lab of undergrad and grad students in the biological and computer sciences departments
- Using text analysis techniques and tools to use social media as a tool for health
- Set up and maintained a mongoDB database and codebase to support efficient querying of social media dump files
- Contributed to image segmentation for deep learning to measure effectiveness of schistosomiasis treatments

### Software Development Intern - Siemens

May 2023 – Jan 2024

- Created a Python application for development and testing of Simcenter by Motion and Solver Teams
- Applied concepts from Data Structures and Algorithms courses to write and maintain efficient and readable code
- Maintained a large code base and set up and simplified installation and documentation using Mercurial
- Streamlined Simcenter Motion and Solver development process by combining features of 7 different applications

### Research Assistant - National Advanced Driving Simulator

Oct. 2022 – May. 2023

- Learned basic principles of computer vision including Gaussian blurring and image filtering
- Developed, debugged, and refactored Python code to run on a Raspberry Pi
- Trained and developed a deep learning model capable of navigation using Tensorflow and Google Colab
- Reduced image capture and processing time by over 0.6 seconds by leveraging knowledge of Picamera API

### Events Chair - Association for Computing Machinery

August 2023 - Spring 2024

- Helped to plan annual University of Iowa Computing Conference in Spring semester
- Setup and ran weekly meetings for the University of Iowa chapter of ACM
- Communicated with professors within the CS department to align faculty and executive board goals for the club

### Supplemental Instruction Leader - Computer Science 1

Jan. 2022 – Jun. 2022

- Led supplemental instruction sessions for a class of 200 students
- Gained leadership skills while facilitating supplemental instruction sessions
- Facilitated student learning of computer science concepts using collaborative learning techniques
- Developed a relationship with professional staff in the computer science department and academic resource center

## PROJECTS

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### Solar Viz | *HackUiowa, Python, Streamlit, Docker*

September 2023

- Created a Streamlit dashboard to visualize and optimize solar panel performance at the University of Iowa
- Deployed the application within 36 hours using Docker to simplify dependencies across a team of 4 developers
- Accessed real time solar data by integrating data from external APIs
- Performed payback analysis and conversion efficiency calculations to improve solar energy decision making

### Warp | *Java, Junit, JSDoc, UML*

November 2022

- Analyzed, visualized, and debugged code to perform channel communications in a wireless sensor network
- Gained familiarity with test-driven development, documentation, and artifact creation in an agile environment

## HONORS & AWARDS

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REU Computer Science Organism Analysis(2024), Iowa Flagship Award(2021-2024), UIowa Deans List(2021-2024)

## TECHNICAL SKILLS

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**Languages:** Python, MatLab, Java, C#, C, LaTeX, R

**Libraries:** Tkinter, matplotlib, Altair, OpenCV, ROS

**Other:** Git, Mercurial, Streamlit, Docker, Tensorflow, Colab, Picamera, Pygame, NEAT, PyQt, Google Cloud Platform