

# ADITI KUMAR

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## SKILLS

- **Languages:** C++ , Python ,C, Racket, Java
- **Frameworks/Libraries:** PyTorch, TensorFlow, React, AWS, Git, GitHub, Selenium
- **Database Management:** SQL, NoSQL

## WORK EXPERIENCE

### Research Engineer

Illinois Institute of Technology, Chicago, IL

JULY 2024 - Present

- Led a project focused on enhancing ambulation safety for cane users in moderately crowded environments.
- Strengthened engineering skills in user-centered design, material evaluation, and prototyping.

### Teaching Assistant - Systems Programming (C/C++)

Illinois Institute of Technology, Chicago, IL

JAN 2024 - May 2024

- Mentored in development and instruction of curriculum for CS 351 course, helping to increase student pass rates by 15% through tailored support.
- Provided students with hands-on experience in systems programming using x86 architecture.

### Research Assistant (Java, C++, C)

Illinois Institute of Technology, Chicago, IL

AUG 2023 - May 2024

- Researched and executed Caper, an open-source tool for converting packet filters into machine-executable instructions, enhancing network traffic analysis efficiency by 20%.

### IIT ECO CAR EV Challenge (Python)

Illinois Institute of Technology, Chicago, IL

AUG 2023 - May 2024

- Designed and optimized autonomous vehicle algorithms with Python and PyTorch, improving obstacle detection accuracy by 15%, using CNNs and sensor fusion.
- Integrated sensor data (cameras, LiDAR, radar), boosting detection accuracy by 25%.

### Software Engineer Intern (Java, TypeScript, Python)

MapMyIndia, Delhi, India

MAY 2023 - JULY 2023

- Architected and debugged software solutions using Python, Java, and TypeScript, executing machine learning algorithms with PyTorch and TensorFlow, contributing to a 10% increase in application efficiency.
- Implemented an automated CAPTCHA recognition system with Tesseract OCR, achieving a 70% recognition accuracy and reducing manual verification time by 50%, demonstrating proficiency in computer vision and image processing.

### Research Intern

National University of Singapore, Singapore

JUN 2022 - JUL 2022

- Engineered a prototype for visually impaired accessibility using audio cues through object detection, employing machine learning algorithms (specifically CNNs) and distributed system architecture to handle real time data processing.
- Incorporated advanced optimization techniques, including linear programming and nonlinear optimization, to achieve a 15% improvement in object detection accuracy and a 20% increase in computational efficiency in software applications.

## PROJECTS

### Twitter Web Scrapping (Python, Tweepy, BeautifulSoup, SQLite)

- Engineered a Python web scraper with Tweepy and BeautifulSoup to collect and store Twitter data in SQLite.

## EDUCATION

Illinois Institute of Technology, Chicago, IL

May 2024

### Bachelor of Science, Computer Science

**Related Coursework:** Operating Systems, Data Structures and Algorithms, Programming languages & Translators, Database Organization