# Aditya Katare

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## Work Experience

**Indian Space Research Organization (ISRO)**          *Bangalore, KA*
*Project Intern*                                        *Oct 2024 – Dec 2024*

- Engineered a backend system to process raw satellite data, increasing processing efficiency by 30% that accelerated data throughput for research teams.
- Designed intuitive GUIs for visualizing satellite orbits, reducing time spent on data interpretation by 25%, and improving accessibility for both technical and non-technical users.
- Developed an export feature enabling seamless data transfer for non-technical users, streamlining workflows and enhancing system integration for cross-departmental analysis.

## Projects

**Animal Shelter** Link ↗

- Designed and deployed an n-tier web architecture using **RESTful** web services and JavaServer Faces (JSF), providing the shelter with a scalable platform for online adoption using **Apache Derby** and **SQL**.
- Increased adoption requests and volunteer support through the shelter's new online presence, improving animal rehabilitation efforts and community engagement.

**Full Stack E-commerce Website**

- Engineered a single-page, full-stack application with **React**, backed by **Firebase** and **Firestore**; delivered real-time product browsing, cart updates, and order history without page refreshes
- Integrated Firebase Authentication for secure account management and authored serverless Cloud Functions that invoke the **Stripe API** to execute PCI-compliant payments, persist transactional data, and issue confirmation receipts end-to-end

**Twitter Bot**

- Designed an autonomous Twitter account using TwitterAPI to locate and share nearby resources like oxygen concentrators, medicines, and COVID vaccination centers.
- Automated **500+** tweets and responses, assisting **1,000+** users in finding critical resources during rising COVID demand.

**Kiosk Touchless Agent**

- Engineered an open-source multimodal HCI framework, fusing **MediaPipe** hand-tracking, **Whisper** STT, and a **LangChain** powered intent parser to deliver real-time, contact-free control for desktop, web, and IoT systems
- Developed a late-fusion inference engine that synchronizes temporal CNN gesture embeddings with transformer-level voice intents, achieving 93% fusion accuracy and end-to-end response times under 150ms
- Deployed the platform as a privacy-first, local-execution PWA with Playwright/PyAutoGUI automation pipelines, biometric re-authentication, and adaptive accessibility layers, sustaining 94% task-completion rates in healthcare, education, and public-kiosk pilots

**Timerly Chrome Extension** Link ↗

- Developed a time-limited site blocker for YouTube and Netflix with background tracking and user-configurable limits, enabling users to manage screen time effectively.
- Packaged the extension for easy installation, preparing it for potential Chrome Web Store release and allowing future widespread usage.

## Education

**Ramaiah University of Applied Sciences** *Dec 2021 – Present*
*B.Tech in Computer Science*
- **GPA:** 9.18

## Publications

**Utilizing AI in Network and Mobile Security for Threat Detection and Prevention** Jan 2025
Deepak Varadam, Sahana Shankar, ***Aditya Katare***, Mohammed Amin Almaiah
[Link ↗]

## Technologies

**Languages:** Python, Java, MATLAB, SQL, JavaScript

**Technologies and Frameworks:** React, Git, Spring

**Libraries:** Mediapipe, CV2, Numpy, Keras, Tensorflow

## Certifications

Google Advanced Data Analytics [Certificate ↗]
Machine Learning by Stanford University and Andrew Ng [Certificate ↗]
Blockchain Basics by University of Buffalo [Certificate ↗]