Aaditya Yadav

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Education

Indian Institute of Technology (IIT), Jammu *Oct 2022 – Mar 2026*
Bachelors of Technology in Civil Engineering *(Expected)*

- GPA: 7.4/10
- **Relevant Coursework:** Principles of Programming Languages, Data Structures and Algorithms, Linear Algebra, Calculus

Technical Skills

Programming Languages: Python, C++/C, SQL, React, Arduino, JavaScript, Rust

Tools & Technologies: GNU/Linux, MySQL, Windows, Git, Google Firebase, Flutter, ROS, Google Colab

Databses: MySQL, Google Firestore Databse, MongoDB, Django

Web Development: Flutter, React, HTML/CSS, Node.js

Python Libraries: Numpy, OpenCV, Tkinter, Yolo, PySerial, Matplotlib, OS

Experience

Software Developer *Jammu, J&K, India*
Independent Project with Prof. Badri Narayan Subudhi - IIT Jammu *May 2024 - July 2024*

- Designed and developed an AI-powered augmented reality (AR) glasses system for enhanced tank operations.
- **Frontend Development:** Developed and deployed an Augmented Reality (AR) interface for tank operators giving them a 360 degree view of outside in real time.
- **Backend Implementation:** Developed custom backend scripts to securely stream live encrypted video feeds using RTMPS protocol, ensuring real-time performance and data integrity.
- **Deployment:** Packaged the project into Linux bundles for modularity, optimized AR glasses integration with Nvidia Jetson, and refined Python scripts to minimize RTMP stream lag to 10-20 ms.
- **Impact:** Addressed real-world challenges faced by frontline soldiers by modernizing their operational workflows with advanced AR technology while receiving awards for the project's impactful contributions.

Software Engineer *Jammu, J&K, India*
Independent Project with Prof. Sahil Kalra - IIT Jammu *Jan 2024 - April 2024*

- Developed a ROS based Robotic Arm whcih could be used to segregate different type of waste materials using a gripper.
- **ROS Implementation:** Developed a 3D model of a robotic arm, integrated it into ROS, and perform motion planning and simulation using ROS and Gazebo.
- **Waste Detection:** Utilized a SimpleCNN architecture with multiple connected layers to effectively distinguish between object classes, achieving an accuracy of over 90%.

Projects

Time-Tablet *July 2024*
A simple Flutter based Scheduler/Attendance app with Database Management

- **Tools & Technologies:** Flutter, SQL, Python, Dart, Google Firebase, Authentication
- Created Separate login and signup interfaces for users.
- Added Synchronization Across Devices to Add, delete, and view your Events Across multiple Devices.
- Added features to handle Database Management and Real Time Updates using Firebase API.

Airline Management *Apr 2019*

Python based Flight booking and Aircraft management app

- **Tools & Technologies:** Python, MySQL, Tkinter, MySQLConnector
- Developed an airline management system for searching and booking flights by number, time, and destination.
- Designed and implemented a MySQL backend to manage flight data efficiently.
- Built a Tkinter frontend integrated with MySQL backend using Python for efficient data handling.

Flipkart Grid 5.0 *Jan 2024*

AI powered Robotic Arm built to tackle Industry's packaging hurdles

- **Tools & Technologies:** Python, YOLOv8, SSH, Raspberry Pi, Depth Sensors, Cameras.
- Developed an AI-driven robotic arm equipped with sensors to address industrial packaging challenges.
- Optimized box and QR code detection to improve pick-and-place accuracy with high-speed arm movement.
- Achieved Top 5 National Finalist status among 300,000+ entries in a nationwide competition in India.

Autonomus EV *Dec 2023*

A robust and reliable Self Driving Electric Vehicle based on Deep Learning.

- **Tools & Technologies:** Python, Linux, ROS, Image Processing, Deep Learning, Arduino, LIDAR Sensors
- Developed a deep learning model for road lane detection, integrating Python scripts with Arduino and ROS to control servo motors for EV navigation.
- Developed a Manual Remote Control using FS-iA6 transmitter and receiver as a fail-safe to ensure passenger safety.

Query-Tool Matching — Inter IIT Tech Meet 12.0 *Oct 2023*

A robust and reliable Self Driving Electric Vehicle based on Deep Learning.

- **Tools & Technologies:** Python, spaCy, Embedding Models, Machine
- Designed a system to map user queries to tools, addressing challenges like value extraction and multi-tool association.
- Created an ensemble method combining multiple embedding models to improve tool extraction accuracy.
- Utilized spaCy for query segmentation and precise alignment with specific tools.

Additional Information

- **Coding Competitions:** Winner of Coding Hackathon, IIT Jammu (Nov 2022); Top 100, Reverse CodingX (1600+ participants), IIT Madras (Dec 2022);
- **Leadership Roles:**
  - **Robotics Club Coordinator** , IIT Jammu (2023-2024)
  - **Contingent Leader, Inter IIT Tech Meet 13.0** , IIT Jammu (2024-2025)
  - **Mentor, Coding Club** , IIT Jammu (2023-2024)
- **Extracurricular Achievements:** Won Intra College Football Competition Pahal '24; Got 1st and 2nd Place in Intra College E-sports Tournament Pravaah '23 & '24 respctively.

Minor Projects:

- Designed and built a 3D-printed **Robotic dog** capable of performing tasks and walking. Developed **inverse kinematics** for smooth motion and refined **3D CAD** designs to integrate components efficiently.
- Developed a high-speed **Line-following bot** using ultrasonic sensors, stepper motors, and a PID controller. Optimized the **PID controller** for maximum speed and precision while navigating lines and mazes. Participated in the IIT Kanpur Techfest and the World Robotics Championship with the same bot.

Hobbies: Football (soccer), Badminton, PC Gaming, Tinkering with Technology
Languages: Hindi (Native), English (Fluent)