Aaditya Prakash Yadav

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Education

Degree/Certificate	Institute/Board	CGPA/Percentage	Year of Passing
B.tech (CE)	Indian Institute of Technology, Jammu	7.34 (Till 4th Semester)	2026
12th Standard	GRM School, Bareilly	94%	2020
10th Standard	GRM School, Bareilly	93.4%	2018

Projects

- **See Through Armour (STA), Indian Army** *May. 2024*
  Developed an AI based smart AR glasses system for Indian Army's Tanks.
  – **Tools & technologies used**: Google Colab, Linux, Python, Open CV, PyTorch, RTMP Streaming
  – Converted the whole project into Linux bundles for modularity and Compatibility across Linux systems
  – Optimized AR glasses to work with Nvidia Jetson Xavier NX GPU reducing the cost of overall project by upwards of 50%.
  – Refined Python scripts to reduce lag to 10-20 ms in the RTMP Stream from external 360 camera.

- **Flipkart Grid 5.0** *Jan. 2024*
  Built an AI powered robotic arm equiped with Cameras and Sensors to tackle Packaging hurdles of the Industry.
  – **Tools & technologies used**: Raspberry PI, Stepper Motors, Depth Sensors & Cameras, YoloV8, Computer Vision, Python
  – Maximized Box and QR Code detection along with pickup and place accuracy of the Arm while managing the arm to move at a fast pace.
  – Reached National Finals and placed in the Top 5 teams all from 100+ teams all across India.

- **Autonomous EV** *Jan. 2024*
  Developed a robust and reliable Self Driving Electric Vehicle based on Deep Learning.
  – **Tools & technologies used**: Image Processing, Deep Learning, Linux, Arduino, Sensors, Stepper Motors
  – Trained a Deep Learning model to detect road lanes, used python scripts to send that data to Arduino which would further control Servo motors to Control the EV.
  – Developed a Manual Remote Control using FS-iA6 transmitter and receiver as a fail-safe to ensure passenger safety.

- **Waste Segregation Robotic Arm** *Dec. 2023*
  Built a Robotic Arm which could be used to segregate different type of waste materials using a gripper.
  – **Tools & technologies used**: Arduino, Robotic Operating System (ROS), Linux, Stepper Motors, Motion Planning, CAD, Inverse Kinematics
  – Engineered a robotic arm powered by ROS along with Motion Planning and Gazebo Simulation which could be used to segregate different types of waste materials.

- **AeroTHON** *Aug 2023*
  Built a Drone for the SAE AeroTHON competition
  – **Tools & technologies used**: CAD, Performance Optimization, Material Selection, Brushless Motors, Analysis
  – Built the CAD model of the Drone and Performed Various Analysis on it to Optimize the design.
  – Carefully selected the Parts and Build Material of the Drone to Maximise Flight Time and Stability.

- **Line Following Bot** *March 2023*
  Engineered a Fast Line following bot based on Ultrasonic Sensors
  – **Tools & technologies used**: CAD, Arduino, Stepper motors, PID controller, Maze Following Algorithms
  – Optimized the PID Controller of the bot for the fastest speed while reliably following the line.
  – Took the Bot to IIT Kanpur Techfest and World Robotics Championship.

- **Robotic Dog** *Feb 2023*
  Built a 3D printed Robotic Dog which could perform a few tasks and walk around.
  – **Tools & technologies used**: Arduino, Servo motors, CAD, Inverse Kinematics, 3D Printing
  – Worked out the Inverse kinematics needed for proper motion of the Bot.
  – Refined and Redesigned the 3D CAD to fit the required components inside .

Key Courses Taken

- Data Structure and Algorithms, Computer Programming, Mechanics, Calculus, Strength of Materials, Linear Algebra, Structural Analysis.

Technical Skills

- **Programming:** C/C++, Python, Rust, HTML, SQL, Arduino
- **Tools & OS:** Git, Jupyter Notebook, Google Colab, Linux, Windows, Robotics Operating System (ROS), Docker, Nvidia Jetson
- **Libraries/Frameworks:** Numpy, Open CV, RosPy, YoloV8, OS, PySerial, etc.

Positions of Responsibility

- **Club Coordinator,** Robotics Club, IIT Jammu *Present*
- **Design Head** Fintech, IIT Jammu *Present*
- **Mentor** Coding Club, IIT Jammu *Present*
- **Event Managment Outreach Head** Tinkering Lab (I2EDC), IIT Jammu *2024*