Ashutosh Bhardwaj

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Education

Vellore Institute of Technology | Graduating May, 2026   Vellore, Tamil Nadu

B.Tech (CSE with Data Science) | CGPA: 7.6

Technical Skills

- **Programming & Tools:** Python, Java, C++, Git, GitHub, SQL, Pandas, Matplotlib, Seaborn
- **AI & Data Science:** TensorFlow, CNNs, YOLOv8, OCR, OpenCV, Object Detection, Image Preprocessing, Statistical Modeling, Regex, Text Preprocessing,
- **Robotics & Systems:** ROS Noetic, ROS2 Humble, SLAM, Nav2 Stack, Arduino

Experience

Senior Autonomous Member | Team Vyadh   May 2023 - Present

- Engineered autonomous navigation using ROS, SLAM Toolbox, and Nav2, improving path efficiency by **30%** and reducing collision risk by **25%**.
- Integrated Intel RealSense D455 to generate point cloud-based 3D maps, enabling localization accuracy within **5 cm**.
- Mentored **10+ recruits**, reducing onboarding time by **40%** through structured ROS training and module-based assignments.

Computer Vision Intern | Oritso   May 2025 - June 2025

- Developed CNN pipeline for handwritten cheque processing, achieving **92% accuracy** on field extraction (date, amount, account number).
- Applied OCR + deep learning models (TensorFlow/Keras) to automate manual workflows, reducing cheque processing time from **10 mins to 3 mins** (**70% faster**).
- Improved model robustness under noisy input by **25%**, increasing real-world deployment reliability.

Projects

Autonomous Aruco-Based Navigation — [GitHub]

- Achieved **94% detection accuracy** for ArUco tags in varying lighting conditions using Python and OpenCV.
- Deployed model in ROS2-Gazebo to enable tag-based navigation, reducing waypoint navigation error by **35%**.

WhatsApp Chat Analyzer for Group Insights — [GitHub]

- Parsed and analyzed **50,000+ chat messages**, generating visual insights into activity trends by user and time.
- Automated visualization with Matplotlib/Seaborn, reducing manual analysis time by **30%**.

TrendSage Lite – Global Sentiment Event Tracker — [GitHub]

- Applied custom NLP pipelines to analyze 60+ global news headlines, uncovering regional sentiment trends across 30+ countries
- Designed an interactive Streamlit dashboard with user filters to visualize trends, boosting accessibility for non-technical users by **40%**.
- Engineered a custom NER system with GeoJSON-based geolocation tagging to auto-extract 200+ country-level entities, cutting manual work by **85%**.

Achievements

- **International Rover Challenge 2025:** Ranked **13th internationally** among **70+ teams**.
- **International Rover Challenge 2024:** Ranked **19th internationally**.
- **NXP AIM:** Reached **Regional Finals** among **100+ competing teams**.