

# ASHWIN BADUNI

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## EDUCATION

**Mahindra University (MU)**

*B.Tech in Computational Mathematics*

Oct 2021 – July 2025

## EXPERIENCE

**National Informatics Centre (NIC)** | *AI Software Intern*

Jan 2025 – April 2025

Built an AI chatbot that streamlined vehicle registration support using NLP and real-time analytics. Improved backend scalability with FastAPI, ensured secure user access via CAPTCHA, and boosted engagement through interactive data visualizations.

**Gurugram Metropolitan Development Authority (GMDA)** | *Full-Stack Intern*

June 2022 – Aug 2022

Revamped the UI/UX of GMDA's internal dashboard using Bootstrap and JavaScript, delivering a more responsive, accessible, and cohesive user experience across platforms. Collaborated closely with backend teams to streamline data workflows, minimizing manual input and elevating operational efficiency.

**Mahindra University Student Council** | *Finance Representative*

Managed end-to-end budgeting for student-led initiatives, ensuring strategic fund allocation, financial transparency, and optimal resource utilization. Also implemented structured financial reporting.

## PROJECTS

**AI Powered Analytics Dashboard Chatbot** [🔗](#)

Jan 2025 – April 2025

- Developed an AI-powered assistant for the Parivahan Dashboard, automating vehicle registration queries using advanced NLP and real-time data analytics.
- Implemented FastAPI-based asynchronous backend with quantized LLM inference, enabling low-latency, scalable performance.
- Delivered interactive data visualizations and future trend projections, enhancing decision-making for end-users.
- Integrated CAPTCHA-based security and RESTful APIs, ensuring robust protection against automated threats.

**AI Integrated Human-Machine Interface for Motorcycle Safety** [🔗](#)

Feb 2024 – June 2024




- Developed a real-time vehicle monitoring HMI using YOLOv5, PyTorch, and OpenCV for accurate object detection and tracking.
- Automated movement classification, speed estimation, and distance tracking for dynamic traffic scenarios.
- Enabled proactive safety insights for motorcycles by integrating multi-dimensional analysis and customizable detection thresholds.

**Video Based Motion Amplification and Vibration Analysis** [🔗](#)

Dec 2023

- Developed a self-supervised tool for video-based motion magnification and vibration analysis.
- Enabled targeted amplification and ROI-based diagnostics using optical flow and bounding boxes.
- Automated frequency extraction and anomaly detection with FFT, time-series graphs, and heatmap visualization.
- Delivered interactive 3D plots and multi-setting analysis for precise, non-contact vibration monitoring.

CERTIFICATIONS

Google Cybersecurity Professional Certificate    Credential ID: DXRLYIKE4D2T	2025
IBM Data Analyst Professional Certificate    Credential ID: 9WRKVKV2DUIH	2025
IRM Enterprise Risk Management - Level 1    Credential ID: IRMIN/L1CIM/2023/00000000000675	2025

SKILLS

<b>Programming Languages:</b> C, C++ , Python, Java, SQL, Rust, JavaScript, R programming, HTML
<b>AI/ML and Data Science:</b> PyTorch, TensorFlow, OpenCV, YOLOv5, CUDA, FastAPI, NLP, Quantized LLM inference, Real-time analytics, Data visualization (Matplotlib, Seaborn, Power BI, Tableau), Machine Learning Algorithms, Deep Learning, Time-Series Analysis, FFT, Optical Flow, Data Engineering
<b>Development Tools:</b> Linux, Bootstrap, Git, GitHub, RESTful APIs, Asynchronous Programming, Version Control, UI/UX Design Principles, Jira, Asana, Slack
<b>Cloud and DevOps:</b> AWS, Azure, Google Cloud, Cloud Computing, API Security, DevOps (CI/CD, automation, infrastructure as code)
<b>Cybersecurity:</b> Cybersecurity, Secure Authentication (CAPTCHA), Network Security, Quantum Computing
<b>Mathematics and Finance:</b> Partial Differential Equations, Linear Algebra, Calculus, Real Analysis, Functional Analysis, Probability, Statistics, Financial Mathematics, Technical Analysis, Stochastic Processes, Optimization, Risk Management
<b>Business and Communication:</b> Technical Documentation, Cross-functional Collaboration, Financial Reporting, Data Storytelling, Presentation Skills, Writing Skills
<b>Emerging Tech:</b> Generative AI Tools (ChatGPT, CoPilot, Claude), Blockchain, RPA, AR/VR (basic)
<b>Soft Skills:</b> Communication, Teamwork, Adaptability, Critical Thinking, Leadership, Problem Solving, Analytical Skills, Attention to Detail

ACHIEVEMENTS

Smart India Hackathon (SIH)   Winner	2023
Indian International Model United Nations (IIMUN)   High Commendation	2017
Scindia School Model United Nations (SCIMUN)   Special Mention	2016