Ashwin Baduni

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EDUCATION

Mahindra University (MU)   Oct 2021 – Aug 2025
B.Tech in Computational Mathematics

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.

PROJECTS

Building a Transformer from scratch 🔗   June 2025
- Implemented a transformer model from scratch in PyTorch, faithfully reproducing the "Attention Is All You Need" architecture with custom multi-head self-attention, positional encoding, and layer normalization.
- Developed an automated pipeline for training, hyperparameter tuning, checkpointing, and real-time experiment tracking on large NLP datasets.

Graph Neural Net Comparison Toolkit 🔗   May 2025
- Created a toolkit for benchmarking and visualizing multiple GNN architectures, supporting standardized evaluation and plug-and-play model integration.
- Enabled comparative analysis across datasets with unified metrics and detailed reporting to streamline GNN research workflows.

AI Powered Analytics Dashboard Chatbot 🔗   Jan 2025 – April 2025
- Engineered an intelligent FastAPI chatbot for the Parivahan Dashboard that leverages quantized LLMs, adaptive data parsing, and real-time analytics to process natural language vehicle registration queries, deliver dynamic visualizations and statistical insights, and ensure security with CAPTCHA verification and response caching.

Video Based Motion Amplification and Vibration Analysis 🔗   Dec 2023
- Developed an award-winning self-supervised tool for motion magnification and vibration analysis in videos, featuring targeted ROI amplification, optical flow-based processing, and support for multiple amplification settings.
- Integrated FFT and time-series vibration analysis, 3D graph plotting, and heatmap visualization, leveraging motion magnification techniques for non-contact diagnostics.

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

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*   2023

EXTRACURRICULAR ACTIVITIES

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.

Mahindra University Maths Club | *Volunteer*

Collaborated with peers to organize mathematics workshops and competitions, promoted analytical thinking, and contributed to fostering a vibrant mathematical community on campus.

SKILLS

Programming Languages: C, C++, Python, Java, SQL, Rust, JavaScript, R programming, HTML

AI/ML and Data Science: PyTorch, TensorFlow, OpenCV, YOLOv5, CUDA, FastAPI, NLP, Quantized LLM inference, Real-time analytics, Data visualization, Machine Learning Algorithms, Deep Learning, Time-Series Analysis, FFT, Optical Flow, Data Engineering

Development Tools: Linux, Bootstrap, Git, GitHub, RESTful APIs, Asynchronous Programming, Version Control, UI/UX Design Principles, Jira, Asana, Slack

Cloud and DevOps: AWS, Azure, Google Cloud, Cloud Computing, API Security, DevOps (CI/CD, automation, infrastructure as code)

Cybersecurity: Cybersecurity, Secure Authentication (CAPTCHA), Network Security, Quantum Computing