

ROHIT MAHESH

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LinkedIn

GitHub

Education

Vellore Institute of Technology

Bachelor of Technology - Computer Science Engineering

Chennai, India

2022 - 2026 9.02* (CGPA)

DAV School, Adambakkam

XII-CBSE

Chennai, India

2022 94.8%

DAV School, Adambakkam

X-CBSE

Chennai, India

2020 91.4%

Experience

INDIAN INSTITUTE OF SCIENCE (IISc) [Certificate]

Bangalore, India

Research Intern, Neurodynamics Lab, Centre for Neuroscience

May 2024 - July 2024

- Microscope Automation:** Automated the XY-base movement of an Image Scanning Microscope using Arduino Uno & stepper motors, enabling raster scanning with >95% positional repeatability and improving experiment throughput by 40%.
- Control Interface:** Engineered a custom graphical user interface (GUI) featuring intuitive controls for managing motor speed increments and scanning area dimensions, leading to a 75% reduction in manual adjustment errors.
- Behavioral Data Analysis:** Analyzed 500+ data points for the study "Effects of Event Boundaries on Temporal Order Memory," using PsychoPy, MATLAB, and Origin analytics, achieving 92% reproducibility.

SRIP 2024, VIT Chennai (Funded by MeitY) [Certificate]

Chennai, India

Research Intern, IEDC Lab, CSE Dept.

June 2024 - July 2024

- Hybrid Similarity Model:** Developed a hybrid embedding model integrating BERT, RoBERTa, SBERT, and Word2Vec with a Siamese BiLSTM network, improving grading accuracy by 31%.
- Negation & Nuance Handling:** Added negation-aware scoring achieving AUROC 0.984 across 8k+ samples — [GitHub]
- Tools:** Developed full pipeline using TensorFlow, PyTorch, NLTK, and scikit-learn; reduced inference time by 28%.

SURGE 2025, INDIAN INSTITUTE OF TECHNOLOGY (IITK) [Certificate]

Kanpur, India

Research Intern, Privacy Lab, CSE Dept.

May 2025 - July 2025

- Quantized PIR:** Implemented a quantifiable private information retrieval system, enabling tunable privacy under fixed computation budgets; reduced bandwidth by 55%.
- Privacy-Efficiency Trade-off:** Designed weighted-interval database model improving query efficiency by 40% — [GitHub]
- Tools:** Worked with C/C++, DPFs, LP optimization, and cryptographic primitives to build QPIR pipelines.

Projects

- Parkinson's Disease Classification with CNN:** Built a deep learning model combining CNN and a quantum-inspired layer for MRI analysis. Achieved 97.16% validation and 97.33% training accuracy for early-stage Parkinson's detection. [GitHub]
- E-Commerce Product Recommender:** Built a hybrid recommendation system with a Knowledge Graph based RAG pipeline for collaboration filtering, vector embeddings, and LLM-powered explanations. [GitHub]
- Multimodal Emotion Recognition:** Implemented emotion classification by fusing facial and audio features (MFCC) using CNNs, TensorFlow, OpenCV, and Librosa - [GitHub]
- Traffic Sign Detection System:** Built a real-time system using CNN, ResNet-50, Con-ViT, MobileNetV3, and Efficientnetv2. Integrated few-shot learning to handle low-resource classes, achieving over 98% accuracy across all models tested - [GitHub]

Achievements & Certifications

iConSCEPT 2025 - Paper Acceptance

NIT Puducherry

Paper ID: 114

Nov 2025

- ADP-LoRA:** Proposed a privacy-preserving fine-tuning framework integrating LoRA with adaptive noise control, noise-aware pruning, and a dynamic feedback controller for DP-LLM training, achieving 77.9% accuracy on BERT under a privacy budget of $\epsilon \approx 7.3$, with a 7+ point reduction in the typical DP vs non-DP performance gap.

Defy'25 Hackathon - ARCA Team India (Public Goods Track)

India

3rd Place Winner

March 2025

- BCHAIN (Web3 Blood Donation Platform):** Developed a decentralized blood-donation platform using Solidity smart contracts for secure donor-recipient matching, tokenized incentives, and Ether-based fundraising; built using Next.js, Web3.js, and HardHat. [GitHub]

IBM RAG & Agentic AI Professional Certificate [Certificate] | SQL for Data Science (UC Davis) [Certificate]

Technical Skills

- Languages:** Python, Java, C, C++, HTML/CSS, JavaScript, SQL (MySQL, Oracle, PostgreSQL)
- Automation:** Build & Deployment (Java, Python), Voice Chatbots (pyttsx3, pyaudio, speechrecognition, torch)
- Developer Tools:** VS Code, Postman, Google Cloud Platform, Tableau, MATLAB, Origin
- Machine Learning:** PyTorch, TensorFlow, scikit-learn, NLTK, LoRA, NumPy, Pandas
- Technologies/Frameworks:** Node.js, React.js, Next.js, FastAPI, REST APIs, JSON, Flask (basic)
- AI Engineering:** Multi-agent frameworks (A2A, MCP, CrewAI), LangChain, LLM orchestration, agent workflows