

Akshat Gupta

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EDUCATION

Madhav Institute of Technology & Science (MITS), Gwalior
Bachelor of Technology in Computer Science Engineering
Minor Degree with Research in Science & Technology
(Madhya Pradesh, India)

(September 2024 – Present)

RESEARCH EXPERIENCE

Research Intern – Edgent AI

- Studied and analysed **deep learning and NLP research papers**, bridging theory with applied experimentation
- Executing Modern DL models like AlexNet, NiN, DenseNet, GoogLeNet, ResNet, Seq2seq, RNNs , LSTM, GRUs.
- Implementing models using research paper, achieving accuracy for Industrial efficiency.
- Developed and maintained **Python notebooks for text, image, and voice classification models** using PyTorch and TensorFlow.
- Authored **advanced machine learning and deep learning handbooks**, focusing on mathematical intuition and model explainability.
- Assisted in mentoring peers by simplifying complex ML concepts and architectures.

(October 2025 – Present)

PROJECTS

Mangrove Carbon Biomass Estimation

- Built an **AI-based MRV pipeline** using **regression models** to estimate carbon sequestration from geo-tagged field data.
- Enforced **blockchain-backed verification** by hashing verified MRV records and minting **ERC-721 NFTs on Polygon**.
- Enhanced a React Native field app for offline data capture, GPS tagging, and immutable IPFS storage.

Handwritten Digit Recognition (MNIST)

- Designed neural networks with **0, 1, and 2 hidden layers** using NumPy and TensorFlow.
- Implemented **forward propagation, backpropagation, and activation functions** from scratch.
- Evaluated performance statistically and visually.

Idea-Capture AI – Offline Voice-to-Text Notebook

- Expanded an **offline speech-to-text and summarization system** using **whisper.cpp and llama.cpp (Mistral 7B)**.
- Automated recording → transcription → summarization via shell scripting.
- Stored structured outputs locally in JSON for fast offline search.

TECHNICAL SKILLS

Programming Languages: Python, C, C++, JavaScript, SQL.

ML Techniques: Machine Learning, Deep Learning, Neural Networks, NLP, Generative AI, Model Evaluation. Model Training, Data Preprocessing, Pipeline Optimization, Langchain , LLMs.

Frameworks & Libraries: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn.

Tools & Platforms: Git, Docker, AWS, REST APIs, TensorBoard, PostgreSQL, Truffle, Ganache.

Soft Skills: Problem Solving, Research Thinking, Collaboration, Communication, Time Management.