ABHINAV MISHRA
Machine Learning Engineer / Intern

📞 +91-7807952061 — ✉ abhinav714b@gmail.com — ⊙ GitHub — in LinkedIn

Machine Learning and Data Science student with hands-on experience building end-to-end ML pipelines, deploying real-time AI systems, and tracking model performance. Strong foundation in computer vision, NLP, and practical MLOps workflows.

Education

National Institute of Technology, Hamirpur *2024–2028*
B.Tech – Electronics and Communication Engineering

The Scholars' Home, Paonta Sahib *2021–2023*
Higher Secondary Certificate

Projects

Brain Tumour Detection & Classification *PyTorch, CNN, Transfer Learning*

- Improved MRI tumour classification performance to **96% accuracy** using fine-tuned ResNet and VGG16.
- Increased generalization with normalization + augmentation on **thousands of MRI scans**.
- Reduced training time by **30%** using learning rate scheduling and early stopping.

Email Spam Classifier *NLP, LSTM/RNN, PyTorch*

- Built an LSTM-based spam detection pipeline achieving **92% test accuracy**.
- Improved classification stability via optimized tokenization, padding, and dropout regularization.

Live Facial Emotion Detection *OpenCV, CNN, Streamlit*

- Developed real-time webcam emotion recognition supporting **7 facial emotion classes**.
- Trained CNN on **15,000+ RAF-DB images**, achieving **80%+ validation accuracy**.
- Deployed a Streamlit inference app for low-latency on-device predictions.

InSPECt – Video Chat Assistant Chrome Extension *FastAPI, WebSockets, Gemini, Bootstrap*

- Built an AI Chrome extension enabling real-time Q&A over video content with timestamp awareness.
- Implemented a WebSocket-based FastAPI backend for multi-turn conversations and connection stability.
- Integrated **8 Gemini model variants** with automated fallback routing to improve reliability.
- Designed a responsive Bootstrap UI with persistent chat history and real-time connection status.

Technical Skills

Programming:	Python, C++, JavaScript
Machine Learning:	Scikit-learn, Regression, Classification, Feature Engineering
Deep Learning:	PyTorch, TensorFlow, CNNs, RNN/LSTM, Transfer Learning, Hugging Face
MLOps:	MLflow, Evidently, Experiment Tracking, Model Monitoring
Cloud (AWS):	S3, EC2, RDS, Kinesis, Lambda
Data Science:	Pandas, NumPy, Matplotlib, EDA, Data Cleaning
Testing:	Pytest
Tools & Platforms:	Git, Docker, Linux, Jupyter, Google Colab, VS Code, Grafana
Backend:	FastAPI, Flask
Frontend:	HTML, CSS, Bootstrap, React

Experience & Leadership

SPEC (Society for Promotion of Electronics Culture) — Executive Member *2025–Present*

- Led planning and execution of technical events for **200+ participants**, ensuring smooth operations.
- Mentored juniors on ML fundamentals and project execution, improving team readiness for competitions.

Team Vibhav (ECE Technical Club) — Volunteer *2025*

- Conducted and supported technical workshops for **100+ students**, improving hands-on learning outcomes.
- Assisted peer project development, speeding up completion and improving overall technical quality.