

Abhinav Mishra

Machine Learning Engineer

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Skills

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

Experience

SPEC – Society for Promotion of Electronics Culture

2025 – Present

Executive Member

- Led planning and execution of technical events attended by 200+ participants, improving student engagement across ECE domains.
- Mentored junior students on machine learning fundamentals and guided end-to-end project development.

Team Vibhav – ECE Technical Club

2025

Volunteer

- Conducted hands-on technical workshops for 100+ students covering electronics and applied ML concepts.
- Supported peer-led project development through debugging assistance and design reviews.

Projects

Brain Tumour Detection and Classification

- Achieved 96% MRI tumour classification accuracy by fine-tuning ResNet and VGG16 CNN architectures.
- Improved validation F1-score by 14% on 5,000+ MRI scans using data augmentation and normalization.

InSPECt – AI Video Chat Assistant (Chrome Extension)

- Built a Chrome extension enabling real-time question answering over video content with sub-500ms response latency.
- Designed a FastAPI + WebSocket backend supporting 100+ concurrent users with multi-turn conversations.

Live Emotion Detection System

- Developed a real-time facial emotion recognition system achieving 92% accuracy across 7 emotion classes.
- Processed live webcam video at 20+ FPS using optimized CNN inference pipelines.

Email Spam Classification System

- Built an email spam classifier achieving 98% accuracy and 0.97 ROC-AUC on the Enron dataset.
- Reduced false positives by 22% using TF-IDF feature engineering and hyperparameter tuning.

Education

National Institute of Technology, Hamirpur

2024 – 2028

B.Tech in Electronics and Communication Engineering

The Scholars' Home, Paonta Sahib

2021 – 2023

Higher Secondary Certificate