

# Abhinav Mishra

Machine Learning Engineer / Intern

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## Summary

Machine Learning and Data Science student with experience building end-to-end ML pipelines, training deep learning models, and deploying real-time AI systems. Strong foundation in computer vision, NLP, and MLOps with a focus on practical, measurable results.

## 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

## Projects

### Brain Tumour Detection and Classification

Technologies: PyTorch, CNN, Transfer Learning

- Achieved 96% MRI tumour classification accuracy using fine-tuned ResNet and VGG16 models.
- Improved generalization through data normalization and augmentation on thousands of MRI scans.
- Reduced training time by 30% using early stopping and learning rate scheduling.

### InSPECt – Video Chat Assistant Chrome Extension

Technologies: FastAPI, WebSockets, Gemini API, Bootstrap

- Developed an AI-powered Chrome extension for real-time question answering over video content.
- Implemented a WebSocket-based backend enabling multi-turn, timestamp-aware conversations.
- Integrated multiple Gemini model variants with automated fallback handling for reliability.

## Technical Skills

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

## Experience and Leadership

### SPEC – Society for Promotion of Electronics Culture

2025 – Present

Executive Member

- Led planning and execution of technical events for over 200 participants.
- Mentored junior students on machine learning concepts and project execution.

### Team Vibhav – ECE Technical Club

2025

Volunteer

- Conducted technical workshops for over 100 students.
- Supported peer project development and hands-on learning initiatives.