Arnav Bhilwariya

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Summary

B.Tech IT student at NIT Jalandhar with hands-on experience as a machine learning engineer building end-to-end ML pipelines, data preprocessing systems, and backend APIs. Proficient in Python scripting, scikit-learn, LightGBM, TensorFlow, FastAPI, and cloud-based development workflows.

Education

National Institute of Technology, Jalandhar 2023 – Present
B.Tech in Information Technology

Experience

AD Infocom Systems July 2025 – August 2025
Software Engineer Intern – ML Systems

- Designed **data preprocessing and feature engineering pipelines** using Python scripting, reducing manual overhead by ∼35% and cutting ML model training setup time by ∼40%
- Developed **3+ FastAPI endpoints** for real-time ML model inference and deployment; integrated predictions into client-facing REST APIs with Git-based version control

Open Source Contributions

pytorch/torchtitan | PR #3493 | *Merged* 2026

- Fixed broken CI flavor for **FSDP+TP+PP+compile** combination; unblocked distributed training test suite for core PyTorch training framework

BerriAI/litellm | PR #29753 | *Merged* 2026

- Fixed **typo in proxy SSO role mappings** (`generic_role_mappoings_default_role` → `generic_role_mappings_default_role`) in `ui_sso.py`; corrected silent misconfiguration in auth pipeline

huggingface/transformers | PR #46353 | *Open PR* 2026

- Added **ValueError** for unsupported `continue_final_message` parameter in mistral-common tokenizer; improves developer-facing error handling and API safety

Projects

Goal-Directed Active Vision System | *Deep Learning, Computer Vision, IRL* | GitHub 2026

- Built **goal-directed visual search agent** using CLIP ViT-L/14 and Inverse Reinforcement Learning on COCO-Search18 dataset; **outperformed passive baseline** by significant margin on target localization accuracy
- Designed **active vision pipeline** with PyTorch and OpenCV: frame sampling → CLIP feature extraction → IRL-based policy learning → fixation prediction evaluation

Retail Demand Forecasting | *Machine Learning, Time Series* | GitHub 2026

- Built **time-series demand forecasting** system predicting sales across 50+ stores and 3,000+ items; trained LightGBM achieving MAE 1.38 and RMSE 2.01, **outperforming baseline by 22%**
- Designed end-to-end **ML data pipeline**: ingestion → feature engineering (lag, rolling, date features) → model training → evaluation using scikit-learn and Pandas

Technical Skills

Languages: Python, C++, C, JavaScript, Java, SQL
ML / AI: Scikit-learn, TensorFlow, Keras, LightGBM, NumPy, Pandas, Matplotlib, Seaborn
Concepts: Machine Learning, Feature Engineering, Time Series Forecasting, Model Deployment, Data Pipeline Design, Python Scripting, Signal Processing, Model Evaluation
Backend & APIs: FastAPI, Flask, Django, Node.js, REST API Design
Tools & Cloud: Git, GitHub, AWS (EC2), Google Colab, Linux (basic)