Vishak Bharadwaj

Machine Learning Engineer III

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PROFILE

Machine learning engineer with 6+ years building end-to-end ML systems — from deep learning research to production monitoring and MLOps pipelines. Experienced in model explainability, deployment, and drift monitoring at scale. Strong foundations in computer vision, NLP, and quantitative modelling.

EXPERIENCE

Machine Learning Engineer

Feb 2021 — Present

Censius.ai · Bangalore, India

- Built deployment, explainability and monitoring modules using SHAP, LIME and Seldon Alibi to explain model predictions and provide insight into why models produce the outputs they do; logged and monitored with MLflow, WhyLogs and Grafana.
- Created drift prediction APIs during deployment for continuous monitoring of model performance and production data.
- Containerized and deployed services using Docker and GitLab CI/CD; monitored data and concept drift with custom code and WhyLogs.
- Built data quality, drift and performance monitors running on Prefect / Airflow jobs.

Jr. Machine Learning Engineer

Nov 2019 — Dec 2020

Omni-Eye / The Valley Edutech · Bangalore, Karnataka

- Built models for security systems for the Omni-Eye platform.
- **Eye In the Sky:** Real-time image processing pipeline using stacked deep learning models for object detection, facial recognition and plate detection; MTCNN for facial detection, finetuned PyTorch models for recognition; OCR pipelines for plate recognition. Tracked experiments with MLflow.
- **Image Search & Clustering:** Trained and finetuned a CNN autoencoder converting unlabelled images into feature vectors (reconstruction loss 0.002496); inserted into KNN for similarity search and unsupervised clustering algorithms.
- **Voice Assistant:** Audio-to-text assistant responding to a wake-word, built on an acoustic model with a finetuned language model and rescoring algorithm.

Software Developer & Instructor

Jul 2018 — Oct 2019

The Valley Edutech · Bangalore, Karnataka

- Developed a portal for tracking student progress using Flask, MongoDB, HTML and CSS.
- Developed APIs to track GitHub commits for student batches for progress tracking.
- Instructor to multiple Python, Machine Learning and Deep Learning cohorts with a code-first, practical project-oriented approach.

NOTABLE PROJECTS

- **ResNet50 on ImageNet-1k from Scratch** ERAv4 · AWS EC2 — No pretrained weights; trained on full ImageNet-1k on EC2; 75%+ top-1 accuracy; ~10,000 people globally. HuggingFace demo.
- **YouSum — AI YouTube Summarizer** Chrome Extension — Streaming YouTube summaries via Claude & ChatGPT APIs; 5 detail levels, background generation, persistent storage.
- **YOLO Object Detection** Andrew Ng · C4 — Real-time detection for autonomous driving; bounding box prediction, IoU and non-max suppression from scratch.
- **Face Recognition with FaceNet** Andrew Ng · C4 — One-shot face verification using the FaceNet architecture and triplet loss.
- **Poetry Analysis Studio** Flask · Gemini AI — Poem analysis and generation (Haiku, Sonnet, Limerick, Free Verse) with detailed literary analysis via Google Gemini.

DOMAINS

Machine Learning · Deep Learning · MLOps · Computer Vision · NLP · Model Monitoring · Data Science

STACK

Python · PyTorch · TensorFlow · Scikit-learn · Pandas · NumPy · MLflow · Docker · Airflow · Prefect · Grafana · SHAP / LIME · Seldon Alibi · WhyLogs · Flask · GitLab CI/CD

EDUCATION

Bachelor of Engineering

B M S College of Engineering · Bangalore

2012 — 2016

CERTIFICATIONS

Deep Learning Specialization

Andrew Ng · deeplearning.ai

END2 — Extensive NLP via Deep Models

The School of AI

ERAv4 — Extensive & Reimagined AI Program

The School of AI

- **Neural Machine Translation with Attention** Andrew Ng · C5 — Seq2seq model with an attention mechanism, learning to focus on relevant input positions at each decoding step.
- **Neural Style Transfer** Andrew Ng · C4 — Applied one image's style to another's content using a pretrained VGG network with combined content + style loss.
- **Rossmann Store Sales Prediction** Kaggle · Top 0.4% — Deep embedding network; 10% RMSPE; **11th out of 3,000+ teams**.
- **BlueBook for Bulldozers** Kaggle · Top 0.4% — Random Forest Regressor; RMSLE 0.2214; **2nd out of 476 teams**.