Divyansh Shukla

Machine Learning Engineer

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Projects

Smart Waste Segregation System   Raspberry Pi 4, PyTorch, ONNX, Sensors

- End-to-end hardware + software solution for segregating organic, plastic, metal, and glass waste.
- Built deep learning model using **PyTorch** with transfer learning on **MobileNetV2**, deployed via ONNX Runtime.
- Optimized model for low latency inference on **Raspberry Pi 4 (1GB)**.
- Integrated **Raspberry Pi Camera** and LIDAR for energy-efficient motion-triggered image capture.

Technology Proficiency

- **Languages:** Python, C, C++, CUDA C/C++, SQL
- **Frameworks:** PyTorch, TensorFlow, ONNX, NCNN
- **Web Development:** Flask, Django, Django REST Framework, Bootstrap
- **Databases:** PostgreSQL, MongoDB, Qdrant
- **Software Tools:** OpenCV, FFMPEG, PyQt
- **Operating Systems:** Linux (Ubuntu, Raspberry Pi OS), Windows

Skills and Proficiencies

Computer Vision

- Neural Style Transfer, Object Detection, Localization, Classification
- Identity Verification

Natural Language Processing

- word2vec, GloVe, RNNs, GRUs, LSTMs
- Transformers, Attention Mechanisms
- Debiasing Embeddings

Advanced Deep Learning

- GANs, VAEs, Diffusion Models
- Physics-Informed Neural Networks (PINNs)
- Discrete and Continuous Latent Variables

MLOps and High Performance Computing

- ZenML, CometML, Opik
- CUDA C++, JAX, Triton

Certifications

- **Deep Learning Specialization** – Deeplearning.ai
- **Fundamentals of Deep Learning** – NVIDIA Deep Learning Institute