Shramadeep Debnath

Roll No.: 22f3001912
Bachelor of Science (BS - 4years)
DATA SCIENCE and APPLICATION
Indian Institute of Technology Madras , Tamilnadu

+91-8837268744
shramadeepd@gmail.com
GitHub Profile
LinkedIn Profile

Technical Skills

Programming Languages: Python, JavaScript, SQL, Java
Computer Vision & Deep Learning: OpenCV, PyTorch, TensorFlow, YOLO, CNNs, Siamese Networks, Object Detection, Image Classification, Video Analytics
ML & Data Tools: NumPy, Pandas, Scikit-learn, Label Studio, Jupyter Notebook
Frameworks & Backend: Flask, FastAPI, LangChain, Spring Boot
Databases & Infrastructure: PostgreSQL, SQLite, Redis, MinIO, Docker
Developer Tools: Git/GitHub, Postman, VS Code

Experience

- **Migri Technologies** *Sep 2025 – Apr 2026*
  Full stack AI Application Developer Intern
  - Engineered AI/ML pipelines for intelligent document processing and automation workflows, leveraging LLMs and transformer-based architectures to extract and classify structured data from unstructured documents.
  - Designed and evaluated model workflows using LangChain, HuggingFace Transformers, Gemini, and Groq APIs; conducted prompt engineering and fine-tuning experiments to optimize task-specific performance.
  - Integrated ML inference backends with Python (FastAPI/Flask) and deployed model outputs into production-facing Vue.js enabling end-to-end ML-powered features in the MVP.

- **Yupcha Softwares** *Oct 2024 – Aug 2025*
  Machine Learning Developer
  - Developed end-to-end Computer Vision pipelines for image recognition and OCR-based text extraction using PyTorch and YOLO architectures.
  - Built custom object detection and image classification models trained on annotated real-world datasets.
  - Automated dataset annotation and preprocessing workflows using Label Studio, improving training efficiency and dataset quality.
  - Performed model experimentation, debugging, hyperparameter tuning, and performance optimization for improved inference accuracy.
  - Worked with Siamese Networks for visual similarity learning and feature embedding tasks.
  - Tech Stack: PyTorch, OpenCV, YOLO, Label Studio, Python, Siamese Networks.

Projects

– **Uyghur Speech Recognition – Low-Resource ASR**

* Built an Automatic Speech Recognition (ASR) pipeline for Uyghur speech using pretrained Wav2Vec2 and approximately 24 hours of labeled audio data.
* Implemented audio preprocessing, 16 kHz resampling, transcript normalization, tokenizer preparation, and CTC-based model fine-tuning.
* Explored intermediate Wav2Vec2 representations and PEFT/LoRA strategies for GPU-efficient training under limited compute resources.
* Tools & Technologies: Python, PyTorch, Hugging Face Transformers, Wav2Vec2, PEFT, Hugging Face Datasets.

– **YOLO-Based Candy Classification System**

* Built a custom object detection pipeline using YOLOv11 to classify and detect multiple candy categories from images.
* Created and annotated a custom dataset using Label Studio with structured labeling and validation workflows.
* Applied image preprocessing, augmentation, and dataset balancing techniques to improve model robustness and generalization.
* Trained and optimized the model using PyTorch-based workflows, achieving high detection accuracy on unseen samples.
* Tools & Technologies: Python, PyTorch, OpenCV, YOLOv11, Label Studio.

– **Real-Time Household Service Platform**

* Developed a role-based service platform enabling customers to connect with verified professionals for household services.
* Integrated Celery-based asynchronous task processing for reminders, reporting, and automated workflows.
* Implemented Redis caching and JWT authentication for scalable API performance and secure access management.
* Tools & Technologies: Flask, VueJS, Redis, Celery, SQLite, JWT.

Education

– **Indian Institute of Technology Madras** *2022 – 2026*
BS in Data Science and Applications CGPA: 8.07

– **Sri Krishna Mission School** *2021*
CBSE 88.4%