BHARGAVKUMAR PANCHAL

Artificial Intelligence Engineer
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PROFESSIONAL SUMMARY

AI Engineer with MSc in Artificial Intelligence and hands-on experience developing end-to-end AI solutions. Specialized in deep learning architectures, computer vision applications, and production-ready ML systems. Successfully delivered AI projects, including medical image segmentation, achieving 84% accuracy and real-time object detection systems. Proficient in TensorFlow, PyTorch, and cloud deployment with a proven track record of transforming complex AI research into scalable business solutions.

TECHNICAL SKILLS

AI/ML Frameworks: TensorFlow, PyTorch, Keras, Scikit-learn, OpenCV, Hugging Face Transformers
Deep Learning: CNNs, RNNs, YOLO (v4/v5/v8), U-Net, ResNet, Transfer Learning, GANs, Neural Architecture Design
Programming & Tools: Python, SQL, Git, Docker, Kubernetes, Linux, REST APIs, Jupyter Notebooks
Cloud & Deployment: AWS, Azure, Google Cloud Platform, MLflow, Model Versioning, CI/CD Pipelines
Data Processing: Pandas, NumPy, Data Preprocessing, Feature Engineering, ETL Pipelines

PROFESSIONAL EXPERIENCE

Deep Learning Engineer Intern June 2023 - September 2023
Resolute AI Software, Bengaluru, India (Remote)

- Developed and deployed 3 production-ready computer vision models using YOLOv5/v8, achieving 87% mean average precision for real-time object detection applications
- Optimized model inference speed by 35% through quantization and pruning techniques, enabling efficient edge deployment on resource-constrained devices
- Built an automated data pipeline using Roboflow and LabelImg, processing and annotating over 8,000 images for model training and validation
- Created interactive Streamlit demonstrations for stakeholder presentations, improving client engagement and project understanding
- Collaborated with cross-functional team using Agile methodologies, participating in daily standups and sprint planning sessions

Python Developer (AI/ML) February 2023 - May 2023
Mykarsol Technologies, Vadodara, India

- Engineered predictive models achieving 81% accuracy for house price prediction using ensemble methods and feature engineering
- Implemented RNN-based time series forecasting for livestock price prediction, improving RMSE by 22% over baseline models
- Integrated Google Drive and Sheets APIs for real-time data synchronization, processing 3GB+ daily data streams
- Reduced model training time by 45% through distributed computing and hyperparameter optimization techniques

KEY PROJECTS

Brain Tumor Segmentation using U-Net Architecture

- Designed and implemented a custom U-Net CNN architecture for medical image analysis on MRI scan datasets
- Achieved 84% Dice Coefficient and 82% Precision on the validation set of 2,500+ brain MRI images
- Applied advanced data augmentation techniques, including rotation, flipping, and elastic deformation, to improve model generalization
- Technologies: TensorFlow 2.0, OpenCV, NumPy, Matplotlib, CUDA acceleration

Industrial PPE Detection System

- Built a real-time safety monitoring system using YOLOv8 architecture for detecting personal protective equipment compliance
- Achieved 89% accuracy across 6 PPE categories with inference speed of 28 FPS on edge devices
- Implemented CLAHE and histogram equalization for robust performance under varying lighting conditions
- Technologies: PyTorch, OpenCV, TensorRT, ONNX, Edge TPU optimization

Multimodal Smart Environment Control System

- Integrated computer vision and natural language processing for intelligent IoT device control
- Achieved 91% gesture recognition accuracy using MediaPipe and a custom CNN architecture
- Deployed solution on Raspberry Pi with Azure IoT Hub integration, processing 80+ commands per minute
- Technologies: OpenCV, MediaPipe, Speech Recognition, MQTT, Flask, Azure IoT

EDUCATION

Master of Science in Artificial Intelligence September 2024 - September 2025

London Metropolitan University, London, UK

Relevant Modules: Artificial Intelligence, Machine Learning, Deep Learning, Advanced AI, Data Warehousing, Cloud Computing, Internet of Things (IoT)

Bachelor of Engineering in Computer Engineering June 2019 - June 2023

Sardar Vallabhbhai Patel Institute of Technology, Vasad, India

Relevant Modules: Database Management Systems, Data Mining, Theory of Computing, Statistics, Python Programming, Java, Advanced Java, Machine Learning, Cloud Computing, Internet of Things (IoT)

ADDITIONAL INFORMATION

- **Research Interests:** Computer Vision, Natural Language Processing, Reinforcement Learning, AI Ethics
- **Languages:** English (Fluent), Gujarati (Native), Hindi (Fluent)
- **Availability:** Immediate | Full UK work authorization