

BIMALSAGAR H K

+91 9942415553 bimalsagarwork@gmail.com Bimal Sagar Bsagar07

EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, Chennai, India. (An Institute of National Importance, under Ministry of Education, Government of India.)	8.02	2020 - 2024

EXPERIENCE

- Deep Learning Engineer

TensorGo Software

Dec 2023 - Current

Hyderabad, India

 - Built enterprise-grade **Travel Agent** system with phone call integration via Vapi, implementing **Phidata agentic** framework and **custom RESTful API** tool kits for flight offer extraction with 95% accuracy
 - Engineered autonomous **Avatar Bot** for Google Meet handling 200+ monthly meetings utilizing custom TTS pipeline and lipsync model integration, streaming via **GStreamer-AioRTC** architecture for automated interview and client meeting capabilities
 - Architected and implemented Voice Agent with **RAG**-enhanced contextual processing, leveraging **Optimum Distil Whisper** ASR (30% latency reduction), **LlamaIndex** for LLM orchestration, and VAD for real-time user interaction
 - Implemented generative AI pipeline for automation of cartoon production, integrating **ControlNet Hypernetworks** architecture with **LaMa inpainting** models, achieving 50% reduction in production time while maintaining 4K resolution
 - Developed real-time people counting system utilizing **Nvidia Deepstream SDK** and **Apache Kafka** achieving 98% accuracy, implementing Transfer Learning Toolkit and TAO for optimized edge deployment with minimal latency
 - Applied **OpenVINO Model Optimizer** with **NNCF quantization** techniques for CNN architecture optimization, yielding 20% model compression and 2x inference speedup on Intel CPU infrastructure
- Computer Vision Intern

Centre for Industry 4.0 Lab

May 2023 - Aug 2023

Pune, India

 - Constructed an **Object Detection pipeline** for quality inspections on water pump assembly lines, improving defect detection accuracy by 25%
 - Designed CNN hyper-parameter tuning pipeline to perform **GridSearch** instead of conventional GridSearchCV function of TensorFlow
 - Designed and executed a **detection pipeline** that streamlined image capture processes with **cobots**, which increased operational efficiency by 30% and enabled faster identification of quality control issues on the assembly line.

NOTABLE PROJECT CONTRIBUTION

- GoX

TensorGo Software

 - Orchestrated **Kubernetes** infrastructure utilizing **K8s APIs** for pod scaling and load balancing, reducing container termination incidents by 100%
 - Architected and deployed **WebRTC** video streaming pipeline with custom connection handlers, reducing initial latency of 10s to real time and improving connection stability from 70% to 95% in production
 - Developed and optimized end-to-end **LipSync** system leveraging Wav2Lip architecture, **fine-tuned on LRS3-TED** and proprietary datasets, achieving 25% improvement in lip-sync accuracy and real-time performance

LICENCES & CERTIFICATIONS

- Deep Learning - IIT Madras, Prof. Mitesh M Khapra

2023

SKILLS

- ***Programming & Development:** Python, C, Java, SQL, PyTorch, GstWebRTC, TensorFlow, RESTful APIs, Websockets
- ***AI & Machine Learning:** GAN, VLM, Variable Auto-Encoders, Diffusion Models, LLM Fine-tuning, NLTK, OpenCV, LangChain, LlamaIndex, Phidata, Agentic RAG
- ***Hardware Acceleration & Inference:** CUDA, TensorRT, OpenVino, Nvidia Deepstream, Nvidia Triton Inference Server
- ***Infrastructure & DevOps:** Docker, Kubernetes, Apache Kafka, AWS S3, Azure AI Services, GCP, MLOps
- ***Databases & Analytics:** MySQL, Qdrant, InfluxDB, Grafana, Prometheus, Pandas, NumPy, Matplotlib, Seaborn

EXTRA CURRICULAR

* Represented Karnataka State Football Team U16 Camp, Sharadha Residential School Sep 2017 - Oct 2017