Sumukh Chhabra

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Summary

Energetic and driven Computer Science student at Bennett University with strong proficiency in Python and extensive experience in AI model development. Internship experience spans DRDO, WESEE, the Indian Navy, and currently Netweb Technologies (OEM partner with NVIDIA), with work involving object detection systems, AIS analytics, sonar-based underwater mine detection, drone detection research, and ongoing exposure to Large Language Models (LLMs) and Vision–Language Models (VLMs). Proven track record in machine learning pipelines, automation, problem-solving, and delivering reliable, field-ready solutions.

Work Experience

1. **AI Solutions Intern — Netweb Technologies (OEM Partner, NVIDIA)** *Jan 2026 – Present*
   - Working on Large Language Models (LLMs) and Vision–Language Models (VLMs) as part of enterprise AI solution development.
   - Involved in understanding model architectures, inference workflows, and multimodal AI use cases.
   - Assisting senior engineers with experimentation, evaluation, and documentation of AI solutions.
2. **AI Development Intern — CAIR, DRDO, Bengaluru** *June 2025 – Aug 2025*
   - Developed AI-based navigation and surveillance modules for GPS-denied environments.
   - Designed ML pipelines for object detection, data fusion, and defence workflows.
   - Integrated multi-sensor autonomous systems for reliable field performance.
3. **Machine Learning Intern — Indian Navy, Ministry of Defence** *Dec 2024 – Jan 2025*
   - Built object detection models using ResNet-50 and VGG-16 for sonar image datasets.
   - Developed Whisper-based speech-to-text tools for automated defence tasks.
   - Built an AI-powered Minutes-of-Meeting generator using LLMs.
   - Explored AR applications for Beyond Visual Range (BVR) vessel identification.
4. **Data Science Intern — WESEE, Ministry of Defence** *May 2024 – July 2024*
   - Developed a facial detection system for a Defence Office.
   - Conducted research on AIS analytics and drone detection systems.
   - Demonstrated Early Warning Fire Detection System (EWFS) to Naval Delegation.

Tech Stack

Python, Data Analysis, NLP, Data Science using Python, AI Algorithms, Machine Learning Model Development, Exploratory Data Analysis (EDA), Computer Vision (YOLOv5, ResNet, VGG, FaceNet), Speech-to-Text Models (Whisper), Automation, Multimodal AI Pipelines, Large Language Models (LLMs) and Vision–Language Models (VLMs), Model Inference Workflows, Documentation and Evaluation.

Projects

1. **AI-based Navigation & Surveillance in GPS-Denied Environments**
   - Built YOLOv5 + multi-modal fusion pipeline for detecting armed individuals and suspicious activity.
   - Generated GIS-based situational awareness maps.

2. **AI-Powered ISR & Prediction System for Terror Activities**
   - Designed AI platform combining GTD, SATP, live news, and GIS layers to predict high-risk zones.
   - Built hotspot detection and forecasting dashboards using NLP + ML.
3. **Underwater Mine Detection using Sonar Images**
   - Applied ResNet-50 and VGG-16 for underwater mine detection.
   - Achieved high-accuracy mine identification with annotated sonar data.
4. **Rail Kavach — Train Collision Prevention System**
   - Developed YOLO + VGG16 + ResNet + LIDAR-based detection and auto-stop mechanism.
   - Improved accuracy through multimodal fusion and YOLOv5 dataset formatting.
5. **H.A.W.K Module**
   - Integrated Whisper for accurate transcription.
   - Automated defence-term intent matching using NLP.
6. **MEET.FLASH ("Minutes in Minutes")**
   - Built Whisper-based real-time transcription module.
   - Designed Mini-LLM workflows for structured summaries.
7. **Project DhanDrishti Wallet**
   - Built OCR + CV system for banknote identification for the visually impaired.
   - Added audio + haptic feedback output.
8. **Facial Recognition System — YOLOv5 + FaceNet**
   - Built full facial recognition system integrating YOLO detection + FaceNet embeddings.
   - Developed UI frontend using HTML/CSS.
9. **ReallyMe — Voice Cloning Model**
   - Built deep-learning-based voice cloning model.
   - Implemented speaker adaptation + optimized TTS inference.

Education

B.Tech in Computer Science — Bennett University *2023 – 2027*

Class 12 (CBSE) — 2022

Class 10 (CBSE) — 2020