

Swastik

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Projects

LLM-powered SHL Assessment Recommendation System

GitHub Repository

(FastAPI, Python, OpenAI API, LangChain, JS, Render, Vercel)

- Built an LLM-driven reasoning agent using MCP-inspired tool workflows for intent extraction and structured assessment decision-making.
- Designed and deployed a FastAPI backend + JS frontend supporting semantic search, embeddings, and real-time recommendations.
- Implemented semantic vector search with keyword fallback and evaluated recommendations using **BERTScore**, **RAGAS**, and **ROUGE** for semantic relevance and ranking quality.

AI Interviewer and Assessment System

GitHub Repository

(Python, LangChain, LangGraph, OpenAI API, Streamlit, Render, Vercel)

- Developed an AI-driven multi-agent interviewer using LLMs for dynamic questioning and automated feedback.
- Integrated RAG pipelines for context-aware responses and personalized skill analysis.
- Deployed a scalable AI system with a modular backend on Render and frontend on Vercel, evaluating interview responses using **G-Eval** and **BLEURT** for answer quality and coherence.

Product Delivery Verification using YOLOv8

GitHub Repository

(Python, PyTorch, OpenCV)

- Trained a YOLOv8 model on 10K+ labeled images, achieving **85% mAP@50-95** across 16 product categories.
- Designed a real-time verification system automating visual inspection of deliveries, reducing manual errors and ensuring quality control.
- Improved model inference speed by 30% using batch processing and TensorRT optimization.

Speech Emotion Recognition using CNN

GitHub Repository

(Python, TensorFlow, Librosa)

- Developed a CNN-based speech emotion recognition model using **MFCC features** on 840+ audio samples, achieving **95% classification accuracy** across **14 emotion classes**.
- Applied **audio data augmentation** techniques to improve model generalization and robustness, evaluated using **F1-score**.
- Published the research in **YMER Digital Journal (Vol. 24, 2025)**, validating experimental rigor and real-world applicability.

Technical Skills

- **Languages:** Python, C++, SQL, **HTML**, **CSS**, **JavaScript**
- **ML / DL Frameworks:** TensorFlow, PyTorch, Scikit-learn, YOLOv8, OpenCV
- **GenAI / NLP / LLMs:** LangChain, LangGraph, Hugging Face, OpenAI API, RAG Systems
- **AI Workflows:** Multi-Agent Systems, AI Agents, Prompt Engineering, Chain-of-Thought Reasoning
- **Concepts:** Model Evaluation, Data Preprocessing, Computer Vision, Transformer Models

Education

Chandigarh University, Mohali

Jun 2022 – Jun 2026

Bachelor of Engineering in Computer Science and Engineering

Relevant Coursework: DSA, DBMS, OS, CN, Python, Machine Learning, Deep Learning

Certifications

Deep Learning (NPTEL – IIT Madras)

Jan 2025 – Apr 2025

- Covered CNNs, RNNs, optimization, backpropagation, and model tuning.

Introduction to Generative AI – Google

Jul 2024 – Sept 2024

- Completed 17-hour course covering GenAI for text, image, and music generation using diffusion and transformer models.