

Sambhav Surana

AI/ML Developer | Python Developer

I build AI agents, computer vision systems, and full-stack ML products that turn research ideas into working software.



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Experience

Abhyudaya Coding Club Club Member

Shri Vaishnav Vidyapeeth Vishwavidyalaya
2024 - Present

- The development of AI-based projects including Time Table Generation system using constraint satisfaction algorithms
- Organized workshops on Python, NumPy, Pandas, and Scikit-learn for club members
- Collaborated with team members on model optimization and performance enhancement

Certifications

Hackathons & Competitions Hackwave 2.0 Aug 2025

Participated in a 36-hour coding hackathon organized by Echelon Dev Society at CDGI, Indore. Gained hands-on experience in rapid prototyping, teamwork, and problem-solving.

🔗 <https://hackwave-site.vercel.app/>

Introduction to Machine Learning NPTEL Online Certification - IIT Kharagpur Jul-Sep 2024

- Achieved Elite Certificate with a consolidated score of 66%
- Completed an 8-week course covering fundamental machine learning concepts and assignments

Technical Skills

Programming Languages



Python, JavaScript, SQL, Bash

ML Libraries & Frameworks



NumPy, Pandas, Scikit-learn, TensorFlow, PyTorch, Matplotlib

Computer Vision



OpenCV, Image Processing, Data Augmentation, YOLO, Face Recognition, Object Detection

Deep Learning



CNN, Neural Networks, Model Training, Transfer Learning, Feature Extraction

NLP & Generative AI



LangChain, OpenAI API, Ollama, Text Processing, Query Decomposition, LLM Integration

Deployment & Tools



REST APIs, Git, GitHub, Model Deployment, Gradio, WebSockets

Databases



MySQL, MongoDB, ChromaDB

Web Technologies



React.js, Next.js, HTML/CSS, Tailwind CSS

Development Tools



VS Code, PyCharm, Jupyter Notebook, Git

Operating Systems



Windows, Linux

Education

Shri Vaishnav Vidyapee...

CSE (AI-IBM) III Year

7.2 CGPA

B.Tech.

2023 - Present

Velora Transformer Training

A local-first LLaMA-style training stack for safe small-model pretraining and SFT workflows.

2026

- **Training Infrastructure:** Built RoPE, RMSNorm, SwiGLU, GQA, checkpoint safety, and restartable training loops.
- **Data Pipeline:** Prepared tokenizer, FineWeb-Edu, and SFT workflows with RAM-safe mmap loading.
- **Run Safety:** Added micro-batch search, VRAM logging, and atomic checkpoint writes for interrupted runs.

Python, PyTorch, Transformers, FineWeb
<https://github.com/Sambhav242005/Velora>

MagneticStorage Neuro-Savant

A Python agentic memory system that organizes information into hierarchical concept groups and detail cells.

2026

- **Cellular Retrieval:** Designed groups for concepts and cells for detailed vector-backed memories.
- **Consolidation Loop:** Added sleep-mode merge and optimization passes to reduce duplicate memory groups.
- **Agent Tools:** Built commands for status, visualization, persona behavior, story generation, GitHub ingestion, and checks.

Python, ChromaDB, GraphRAG, Ollama
<https://github.com/Sambhav242005/MagneticStorage>

AI Face Detect and Recognition WebGPU

A client-side AI face tracking and recognition application running YOLOv11 and EdgeFace directly in the browser via WebGPU and ONNX Runtime.

2025

- **Browser-Based AI:** Ran YOLOv11 face detection and EdgeFace embeddings in-browser via WebGPU/WASM ONNX Runtime.
- **FastAPI Backend:** Designed a lightweight backend to host FAISS session indexes and JSON metadata.
- **Features:** Built session persistence, pause/resume tracking states, and real-time cropping pipelines.

WebGPU, ONNX Runtime, YOLOv11, FastAPI, FAISS
<https://github.com/Sambhav242005/AI-Face-Detect-and-Recognition>

AI Fitness Trainer

A local computer-vision fitness coach with pose tracking, form feedback, rep counting, and voice guidance.

2026

- **Pose Tracking:** Used YOLOv11 pose estimation for squats, bicep curls, and pushups.
- **Feedback Loop:** Combined exercise geometry with local vision-model review through Ollama.
- **Product Flow:** Delivered browser camera input, rep counting, and text-to-speech coaching.

YOLOv11, Flask, Ollama, Computer Vision
<https://github.com/Sambhav242005/AI-Fitness-Trainer>

Languages

English



Hindi



German

