Gagandeep Singh Sidhu

Data Science / AI-ML Engineer
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Professional Summary

AI/ML-focused Computer Science postgraduate with hands-on experience in computer vision, deep learning, NLP, and real-time AI systems. Strong background in building end-to-end projects including gesture recognition, eye-gaze tracking, sentiment analysis, web scraping, and interactive 3D web experiences. Adept at research-oriented development, model training, and deployment-ready pipelines.

Education

M.Sc. Computer Science – Maharaja Ranjit Singh Khalsa Technical College (2025)

B.Sc. Computer Science – Baba Farid College (2022)

Higher Secondary (12th) – Gian Jyoti Global School, Mohali (2018) | CGPA: 8.1

Technical Skills

Programming: Python, JavaScript
AI/ML: Machine Learning, Deep Learning, CNNs, Transformers, NLP
Computer Vision: OpenCV, MediaPipe, Eye-Gaze Tracking, Gesture Recognition
Frameworks & Tools: TensorFlow, Keras, PyTorch, Scikit-learn
Web & Visualization: Three.js, WebGL
Data: Pandas, NumPy, Matplotlib

Key Projects

- Real-Time Hand Gesture Recognition (CNN + Hybrid Pipeline)
  Developed a real-time gesture control system using MediaPipe landmarks and CNN-based classifiers. Implemented feature extraction, temporal smoothing, and action mapping for system-level control.
- Eye Gaze Tracking System (GPU Optimized)
  Built a gaze estimation pipeline using computer vision and deep learning. Optimized for GPU execution and real-time performance.
- Tweet Sentiment Analysis
  Implemented an NLP pipeline using TF-IDF and machine learning classifiers to analyze tweet sentiment. Handled preprocessing, model training, and evaluation.
- Web Scraper with Advanced Features
  Designed a Python-based web scraping system supporting dynamic pages, login handling, and scalable data extraction workflows.
- 3D Interactive Web Experience (Three.js)
  Created immersive 3D scenes including ocean shaders, lighting presets, and interactive controls using Three.js and WebGL.
- Tree-Scaffold CLI Tool
  Developed a CLI and TUI-based utility to generate folder structures from tree definitions and reverse-generate trees from directories.

Certifications

Data Science & AI/ML Training – NIELIT (2025)

Python Essentials 1 – Cisco Networking Academy