

Abhishek Singh

Python | Machine Learning | Computer Vision | AI

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Professional Summary

Machine learning and computer vision enthusiast with strong Python skills, focused on building real-world AI applications. Experienced in OpenCV, GPT APIs, and deploying intelligent systems with clean code, robust logic, and functional UIs.

Projects & Research Experience

RoboVisionCalib

Developed a camera-to-robot calibration system using OpenCV and ArUco markers to enable an ABB industrial robot to perform automated pick-and-place tasks. Used eye-on-base calibration and implemented pose-to-motion conversion logic.

Tech Stack: Python, OpenCV, ArUco, ABB RobotStudio

GitHub: <https://github.com/abhimattx/RoboVisionCalib>

GPT Summarizer

Interactive app that summarizes PDF files using OpenAI's GPT API. Handles document parsing, chunking, and clean summary generation via Streamlit frontend.

Tech Stack: Python, OpenAI API, PyMuPDF, Streamlit

Live Demo: <https://summarizeropenai.streamlit.app/>

GitHub: <https://github.com/abhimattx/SummarizerOpenAI>

Smart Vision AI

Real-time object detection app using YOLOv8 and OpenCV. Built an interactive Streamlit UI with live webcam and fallback video support for robust deployment.

Tech Stack: Python, YOLOv8, OpenCV, Streamlit

Live Demo: <https://smartvisionai.streamlit.app>

GitHub: <https://github.com/abhimattx/smartvision-ai>

Skills

Languages: Python, C++

ML & CV Tools: scikit-learn, TensorFlow, OpenCV, GPT API, YOLOv8

Libraries: NumPy, Streamlit, Matplotlib, Seaborn, Pandas

Concepts: Model Evaluation, Computer Vision, Prompt Engineering, Deployment

Tools: Git/GitHub, VS Code, ABB RobotStudio, Google Colab, Microsoft Azure

Education

Bachelor of Science in Intelligent Systems with Robotics

Tomas Bata University, Czech Republic

Certifications

Machine Learning A-Z: AI, Python & R — Udemy
