

Abhishek Singh

Python | Machine Learning | Computer Vision | AI

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Portfolio: <https://abhimattx.github.io/>

Professional Summary

Applied machine learning enthusiast with a strong foundation in Python and a focus on real-world, deployable AI applications. Experienced in building and shipping intelligent systems with Streamlit, OpenCV, and GPT APIs. Passionate about combining clean code, model logic, and functional UI to solve practical problems.

Projects & Research Experience

Smart Vision AI

Real-time object detection app using YOLOv8 and OpenCV. Built an interactive Streamlit UI that supports live webcam support and a fallback video mode to ensure robustness in non-camera environments.

Tech Stack: Python, YOLOv8, OpenCV, Streamlit

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

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

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>

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>

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, Azure

Education

Bachelor of Science in Intelligent Systems with Robotics

Tomas Bata University, Czech Republic

Certifications

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