

# 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.

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## Projects & Research Experience

### SmartVision AI

Real-time object detection app using YOLOv8 and OpenCV. Built an interactive Streamlit UI that supports webcam input, demo fallback, FPS counter, and confidence tuning.

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>

### Pick & Place Robot (Thesis Project)

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:

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## 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

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## Education

Bachelor of Science in Intelligent Systems with Robotics

Tomas Bata University, Czech Republic

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## Certifications

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

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