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Project Title:

"AI Based Real time Object Detection"

Project Description:

This project focuses on real-time object detection using the YOLOv5 deep learning model, integrated with tools from the Hugging Face platform. The system is capable of detecting and classifying objects through a laptop webcam or uploaded media such as images and videos. Leveraging Anaconda and Py-Torch for environment setup, the model runs efficiently on local hardware and outputs bounding boxes with confidence scores. The aim is to create a fast, accurate, and scalable solution for visual recognition tasks using cutting-edge AI tools. The project also emphasizes the simplicity of deployment for non-experts, potential applications in automation and surveillance, and the flexibility to adapt to various object categories.

Despite advancements in computer vision, deploying real-time object detection systems remains challenging due to high computational demands, complex model setup, and limited accessibility for non-experts. This project aims to bridge that gap by implementing YOLOv5 with Hugging Face tools to create a user-friendly, efficient, and scalable detection pipeline that works on standard laptops using webcam input or uploaded media. The system must deliver accurate object identification with minimal latency while maintaining flexibility for further integration, such as voice commands or custom datasets.