Object Detection Web App

This project is a web application that allows users to perform object detection using a fine-tuned YOLOv8n model. The application is built with Streamlit, providing an interactive interface for users to upload images and visualize the results.

Table of Contents

Installation

To run this web app, you need to have Python installed on your machine. Follow the steps below to set up the project:

1. Clone this repository:
   ```bash
   git clone https://github.com/yourusername/object-detection-web-app.git
   cd object-detection-web-app
   ```

2. Create a virtual environment (optional but recommended):
   ```bash
   python -m venv venv
   source venv/bin/activate  # On Windows use `venv\Scriptsctivate`
   ```

3. Install the required packages:
   ```bash
   pip install -r requirements.txt
   ```

Usage

1. Start the Streamlit application:
   ```bash
   ```

```
streamlit run app.py
```

2. Open your web browser and navigate to `http://localhost:8501` to access the app.

3. Upload an image using the provided interface, and the model will process the image and display the detected objects.

Requirements

- Python 3.7 or higher
- Streamlit
- PyTorch
- YOLOv8n dependencies

You can find the full list of required packages in the `requirements.txt` file.

How It Works

The application leverages the YOLOv8n model, a state-of-the-art object detection model. When an image is uploaded, the app processes the image through the model, which predicts the bounding boxes and classes of the detected objects. The results are then displayed back to the user with the bounding boxes drawn on the original image.

Contributing

Contributions are welcome! If you'd like to contribute to this project, please follow these steps:

1. Fork the repository.
2. Create a new branch for your feature or bug fix.
3. Commit your changes and push to your branch.
4. Open a pull request.

License

Detection complete!

Detection Confidence Scores

	Class	Confidence Score
0	person	0.43
1	person	0.37
2	person	0.35
3	person	0.34
4	tie	0.30