Rock-Paper-Scissors AI Game

Welcome to the Rock-Paper-Scissors AI Game! This interactive application allows you to play rock-paper-scissors against an artificial intelligence (AI) model through hand gesture recognition using your webcam.

Installation

Before you begin, ensure that you have Python, TensorFlow, Keras, and OpenCV installed on your system. These are essential for running the game and processing the images for gesture recognition.

Project Structure

The project is structured into several key directories:

- **train**: Contains training images for the model, categorized into subfolders for 'rock', 'paper', and 'scissors'.
- **test**: Houses testing images that are used to evaluate the model's performance, also categorized into 'rock', 'paper', and 'scissors'.

Running the Game

To start the game, simply clone the repository, navigate to the directory, and run the main script. Make sure your webcam is connected and functioning properly.

Training the Model

The AI model has been pre-trained with a dataset that includes a variety of hand gestures. If you would like to retrain the model with new data, you can use the images in the **train** directory.

Testing the Model

Testing the model is straightforward. The game will automatically use the images in the **test** directory to evaluate the AI's performance and provide feedback on its accuracy.

Troubleshooting

If you encounter any issues, such as the webcam not being detected or errors during model training or testing, please refer to the troubleshooting section for guidance.

Contributions

Your contributions are welcome! If you have ideas for improvements or bug fixes, please feel free to fork the repository, make your changes, and submit a pull request.

License

This project is open-sourced under the MIT license.

Contact

For support or to report issues, please visit the GitHub repository.

Link to the code: *"https://github.com/HamidrezaAmin/Rock-Paper-Scissors-Game.git"*

Thank you for checking out the Rock-Paper-Scissors AI Game. Enjoy playing the game and exploring the world of AI and computer vision!