Stride

Python Streamlit License

Stride is a real-time exercise visualization and movement similarity tracker. It uses your webcam to generate a **stick-figure overlay** of your body, hands, and face, and calculates a **matching percentage** against reference movements. Perfect for fitness tracking, pose correction, or motion analysis.

✨Features

- **Real-time webcam capture** with minimal latency.
- **Stick-figure overlay** for body, hands, and face landmarks.
- **Movement similarity scoring** with visual feedback.
- **Customizable display options** via sidebar:
- Toggle **Body**, **Hands**, or **Face** overlay.
- Lightweight, easy to run locally with Python 3.11 and Streamlit.

🦠Installation

1. Clone the repository:

```
git clone https://github.com/yourusername/stride.git
cd stride
```

2. (Optional) Create and activate a virtual environment with **Python 3.11**:

```
python3.11 -m venv venv
source venv/bin/activate  # macOS/Linux
venv\Scripts\activate     # Windows
```

3. Install dependencies:

```
pip install -r requirements.txt
```

Ensure your webcam is connected before running the app.

🌳Usage

Run the Streamlit app:

```
streamlit run app.py
```

- Use the **sidebar** to toggle visibility of body, hands, and face overlays.
- The **matching percentage** updates in real-time as you perform movements.
- Compare your movement to reference videos or exercises for feedback.

🦝How It Works

1. Captures video from your webcam using OpenCV.
2. Detects **pose, hand, and face landmarks** via MediaPipe.
3. Converts landmarks into a **stick-figure overlay**.
4. Computes **similarity scores** with reference movements.
5. Displays the overlay and **matching percentage** in real-time.

🦏Dependencies

- Python 3.11
- Streamlit
- OpenCV
- MediaPipe
- NumPy

(All dependencies are listed in `requirements.txt`*.)*

🦆License

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