Yes, exactly! 🎯 Here’s a **summary of what we’ve achieved so far**:

**✅ Achievements in the SWING Project**

**1️⃣ MediaPipe for Arm Swing Coordinate Extraction**

• **Extracted arm movement data** (shoulder, elbow, wrist coordinates).

• **Converted coordinate data** into **arm angles** for analysis.

• **Successfully ran it on Mac and iPhone** (on-device processing).

• **Webcam integration** allows real-time arm movement tracking.

**2️⃣ Anomaly Detection on Arm Swing Data**

We applied **two anomaly detection methods**:

**🔹 Standard Deviation Method (±2 Std Dev)**

• Uses statistical analysis to detect **outlier movements**.

• **Simple and effective** but **assumes normal distribution**.

• **Best for: Quick analysis with small datasets**.

**🔹 Isolation Forest Algorithm**

• **Unsupervised ML method** that isolates anomalies.

• More **robust for detecting irregular movement patterns**.

• **Best for: Scenarios where swing data isn’t normally distributed**.

**3️⃣ Data Visualization**

• **Plotted arm movement trends** (normal vs. anomaly points).

• **Differentiated Right vs. Left arm movements** with distinct colors.

• **Overlaid real-time anomalies on webcam video feed.**

**📌 Next Steps: What Feature Do You Want to Prioritize Next?**

Now that **coordinate extraction and anomaly detection** are working, we can move on to the next feature.

Here are some **potential next steps**—let me know which one you’d like to focus on:

1️⃣ **📲 Convert this into an iPhone app** (on-device processing + UI).

2️⃣ **☁️ Move anomaly detection to AWS SageMaker** for scalable ML training.

3️⃣ **📊 Improve data storage & retrieval** (save results for future analysis).

4️⃣ **📈 Enhance visualization** (make graphs more interactive).

5️⃣ **🤖 Try other AI models (like LSTM Autoencoder) for better anomaly detection.**

**Which feature should we work on next?** 🚀

Convert to iPhone App