NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Computer Science and Engineering
College of Engineering

Human Pose Estimation

Evaluating the Similarity of Poses between two Video Footages

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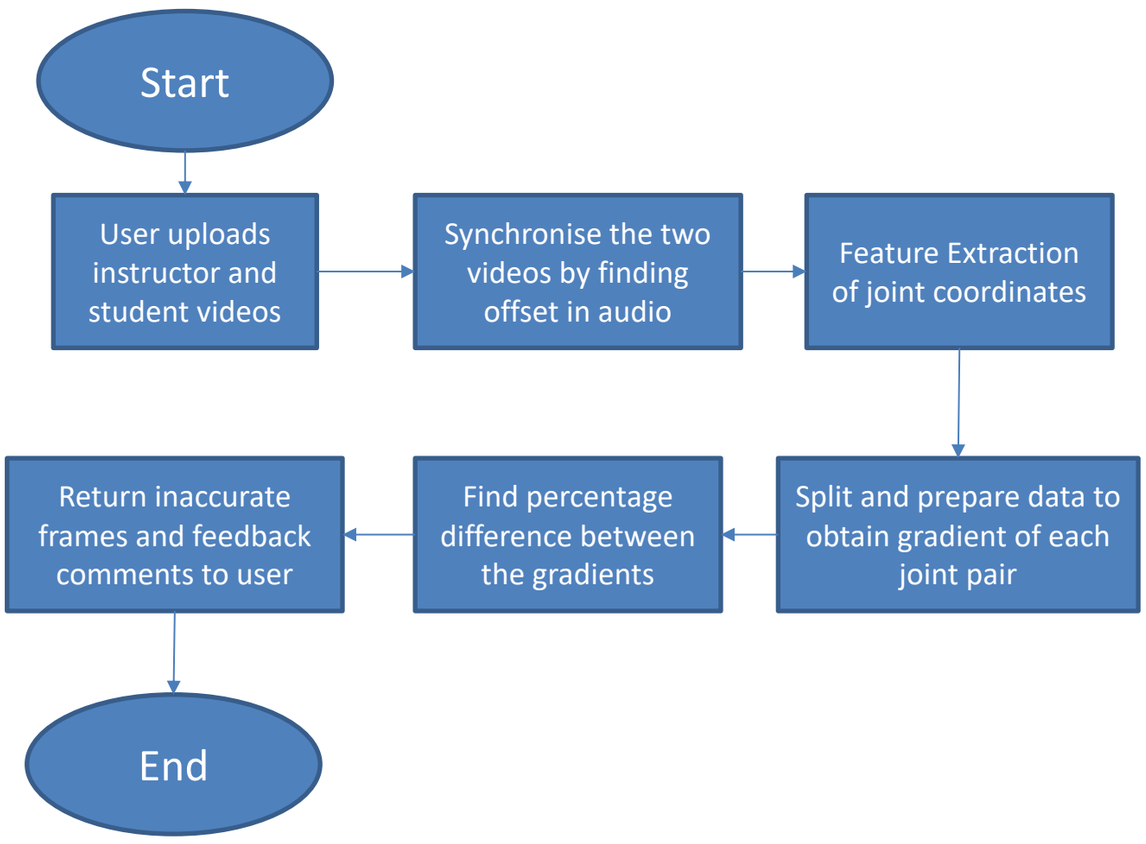
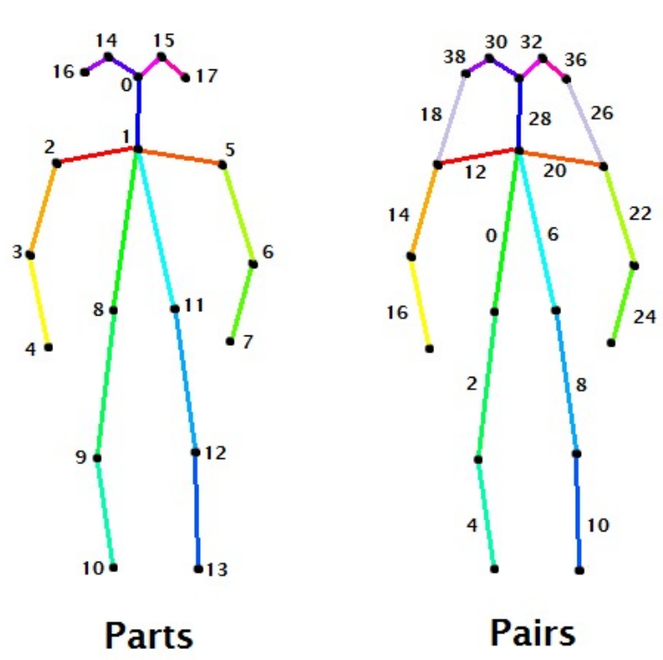
Project Objectives:

- **Develop** a platform as a proof of concept to improve the existing framework of how a **choreographer teaches dance routines** to dancers in a **remote** setting
- Design and develop a machine learning program that can **detect poses of a moving body** from a video file
- **Compare poses** of two bodies from separate video files
- Provide **feedback** to the user on the **similarity of poses**



Features:

- Instructor & Student **Video Input**
- **Time Series Synchronisation** by displacing **audio offset** in video
- **Pose Estimation** using OpenPose
- **Feature Extraction** with COCO Dataset
- **Joint Similarity Algorithm** by finding the **Percentage Difference in gradient** of every corresponding frame in the 2 videos
- **User Feedback** and comments on frames with poor similarity



Significance:

- **Simplify** the current workflow of **overseas collaboration** between **choreographers** and **dancers**
- **All-in-one** tool for **remote** dance classes