Human Pose based Gait Extraction

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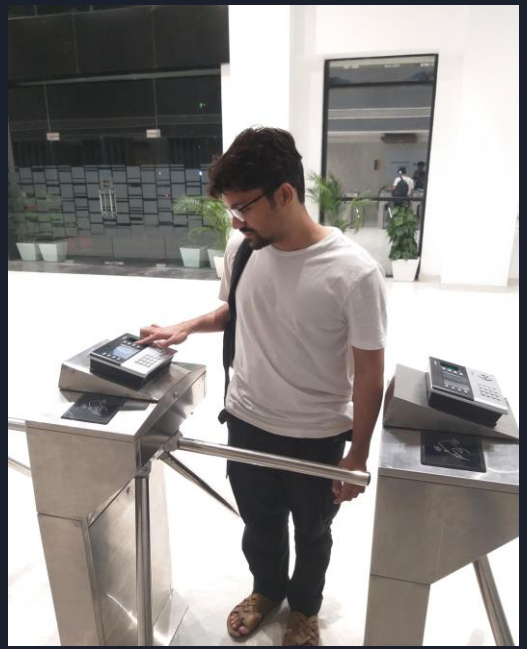
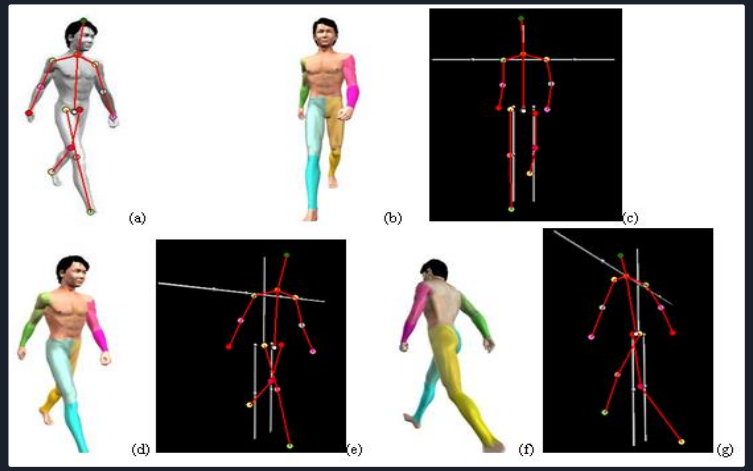
Inspiration

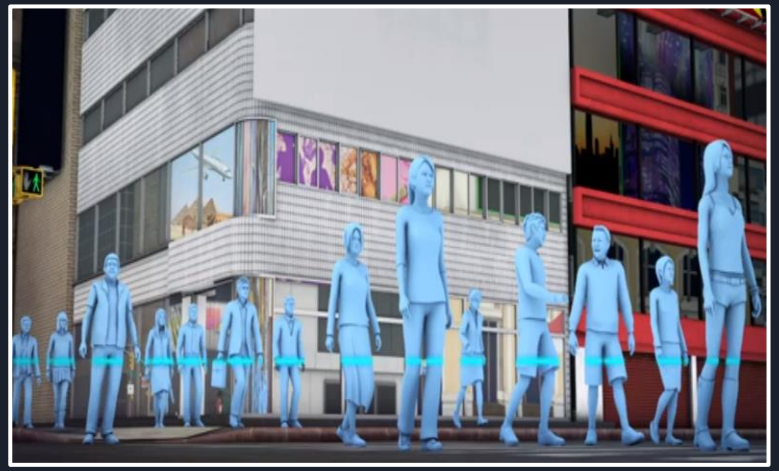
Biometric Entry/Exit System at Plaksha’s Innovation Center



Problem Statement / Approach

Extracting Gait features of people by recognizing their unique walking patterns, from their pose





User Validation:

- Plaksha's Program Team and fellows would like to try a convenient way to enter the premise without using their biometrics

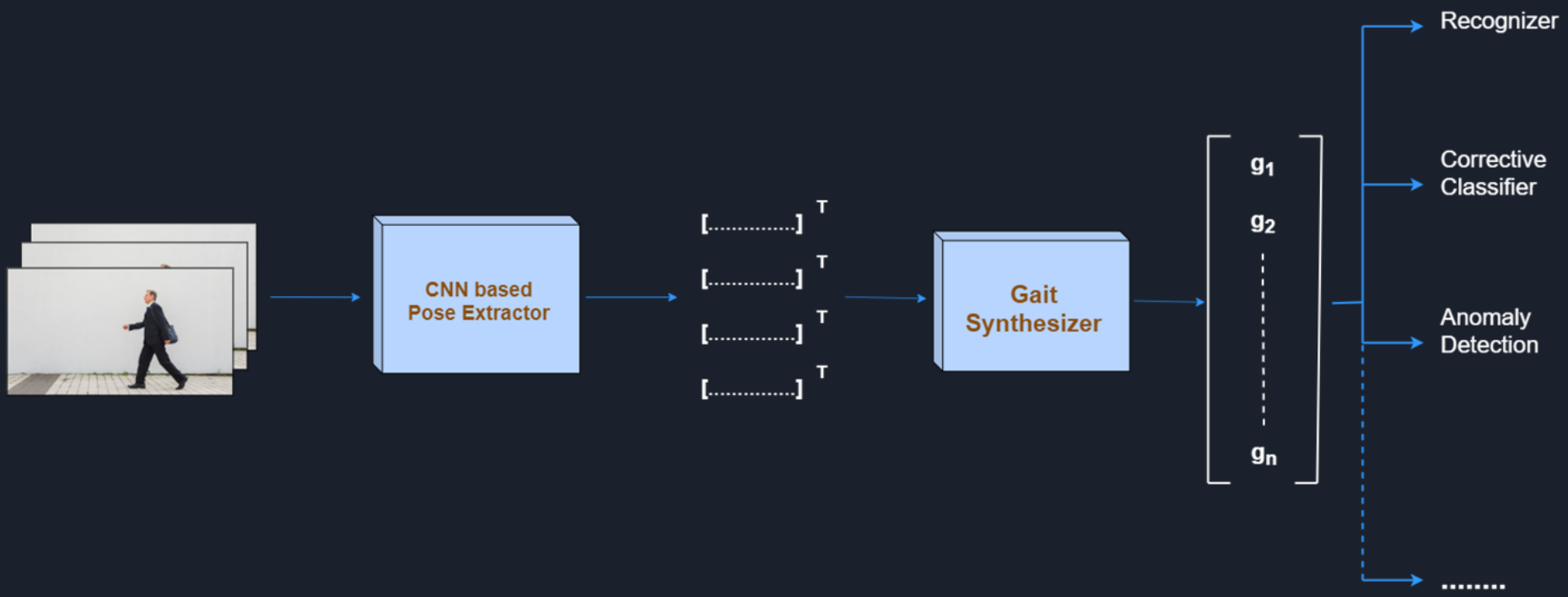
Benefits:

- Recognize a person from their gait
- Detect gait disturbances in aged patients and alert their caretakers during emergency
- Provide gait based posture correction alerts
- Assist physiotherapists to attend to patients with incorrect posture
- Masked thief recognition in bank burglaries
- Enabling virtual Yoga and gym trainer to guide users on form correction

Technical Components of Project

- Get Data in the form of videos
- Extract frames from the videos at a particular rate ‘r’
- Extract the pose/key points of a person from multiple successive frames in a video using Convolutional Neural Network
- Create an embedding called gait from n samples of pose based key points
- Find a ‘good’ way (deep learning or not) to distinguish between two gaits

Architecture



Roadmap

Week 1	Create low-level MVP
Week 2	Data collection, Research about creating gait embedding
Week 3	Research - Find a ‘good’, quantifiable way to distinguish between gaits

Did You Gait it?