1. Dataset

For my pose detection project, I will be using the dataset provided by the PoseTrack Challenge at https://posetrack.net/. This Dataset provides thousands of images (of the same size and resolution) as well as pose annotations with head bounding boxes and position of the body joints for each of them. They are already separated into train, test and validation folders.

2. Methodology

i. Data Preprocessing

This dataset is great because it is the one provided to complete the official PoseTrack 2018 Challenge, from which my project takes inspiration. To preprocess the data, I will iteratively apply convolutions to denoise the images, and then pooling to enhance vital information and reduce image size.

ii. Machine learning model

I want to make a machine learning model that can detect the pose of humans in an image, by identifying them with a head bounding box and sticks to represent the position of body joints. I will use a Convolutional Neural Network to analyze the images, since it needs less pre-processing than other image classification algorithms.

iii. Final conceptualization

I plan on making a webapp, where the user can upload or select an image containing people on which my model will be applied. It will place a stick figure overlapping body parts of people it detects in the image. My goal is to make the model work for images, but ideally, I want it to work for videos too, and if that is the case, I will make a live demo where the model will try to detect people in front of the camera.