Project:

Autism Spectrum Disorders (ASD), often referred to as autism, are neurological disorders characterised by deficits in cognitive skills, social and communicative behaviours. A common way of diagnosing ASD is by studying behavioural cues expressed by the children, and one of the popular symptoms is hand/arm flapping.

Hand flapping is a form of Autism stimming. It refers to repetitive hand movement that occurs up and down or side-to-side. It can include finger wiggling, clapping, moving arms, shaking, clenching fists, or any other variation of these flipping characteristics.

In this project, you will investigate the possibility of classifying the different flipping characteristics based on the Self-Stimulatory Behaviours in the Wild for Autism Diagnosis Dataset (SSBD). There are about 25 videos of hand flapping in the SSBD dataset.

Dataset:
Download the SSBD datasets from https://rolandgoecke.net/research/datasets/ssbd/

Deliverables: There are three components in this project.

Preliminary Project Report (10% - Due on Week 10):
Prepare a report with at least 5 pages that describe the followings:

1. The number of flipping characteristics you wish to classify.
2. Data preparation and preprocessing detailing how you prepare and preprocess the datasets for classification. **Show the end results of the preprocessing steps.**
3. What algorithm do you plan to use or build (model architecture), and why you think this algorithm can solve the problem. **Show preliminary results – at least one model performance**.

Final Report and Code (40% - Week 13,14)
Write a report of 15 pages min. Please use the report template in Spectrum. In the report, you should clearly

- explain your approach and review the relevant literature,
- explain the experiment setup clearly,
- show the results and compare your work with the baseline provided by the Roland Goecke's group
- discuss the findings and limitations and make a conclusion.

Please upload your code with explanation to GitHub and share the link in your report. Please use APA style in formatting your references.