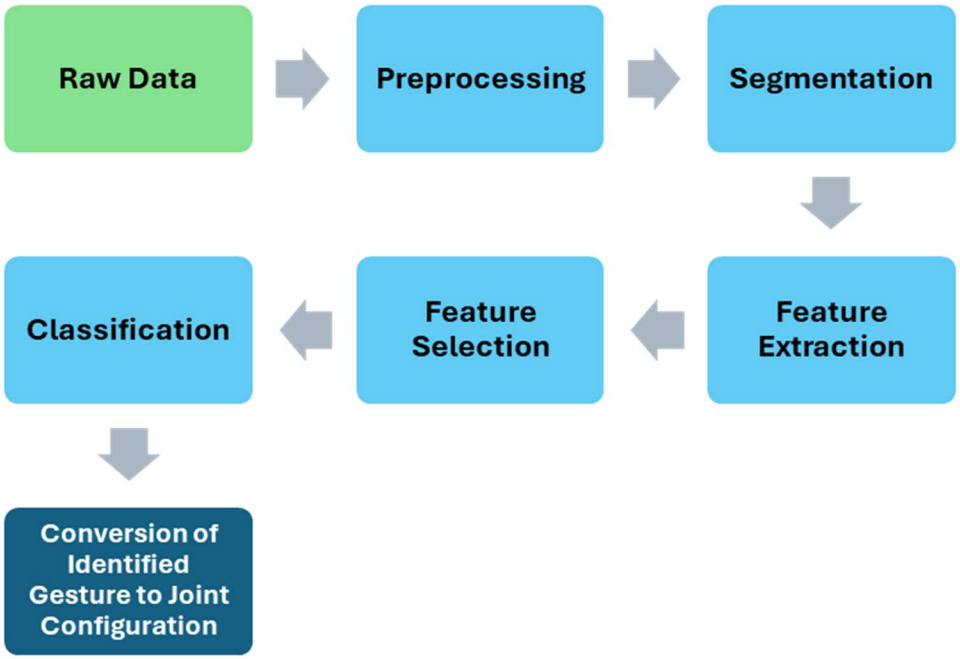
Source code overview

The general steps of my project are as follows:



- ADS1263_reader: For sEMG data reading, filtering, segmentation, and feature extraction. Includes some scripts from Waveshare, manufacturers of ADC board I am using.
- semg_trainer: For taking in extracted features from ADS1263_reader as linear vector, allowing user to add labels, and train the SVM.
    - Gesture_identifier: For loading features for classification (post-training phase). This has yet to be created.
- Gesture_msgs: Creating a more descriptive, interpretable description of gestures identified to be fed into gesture_publisher.
- gesture_publisher: For outputting the identified gestures to the subscriber on the computer responsible for controlling the robot
- gesture_subscriber: For capturing info from gesture_publisher to be converted into joint configuration control inputs (teleoperation node).
    - The teleoperation ROS node has yet to be implemented. It will be largely similar to the teleoperation node based on keyboard input (implementation of pygame) "teleoperation.py" and a subscriber script "franka_state_subscriber.py" will be run on a separate computer “Micro-pc” for translating recognized gesture parameters into joint configurations respective of current joint configurations of Franka robot.