BerryIMU Gesture Data Breakdown

Filename	Command	Gesture	Variable	Threshold	Accuracy
Turn_right_final_data	Volume up	Tilt right	accYangle	-180 < aYa < -70	100%
Turn_left_final_data	Volume down	Tilt left	accYangle	180 > aYa > 70	100%
Flick_right_final_data	Channel up	Flick left	difference_gyro_Z	d_g_Z < -20	100%
Flick_left_final_data	Channel down	Flick right	difference_gyro_Z	d_g_Z > 20	100%
Flick_up_final_data	Power on	Flick up	difference_gyro_X	d_g_X < -25	100%
Flick_down_final_data	Power off	Flick down	difference_gyro_X	d_g_X > 40	93%
Fall_detection_data (found within gesture/gesture_data /winter_data_3/)	Fall detection	Falling (dropping the IMU)	difference_gyro_X, difference_gyro_Y, difference_gyro_Z	(d_g_X > 40 or d_g_X < -40) AND ((d_g_Y < -20 or d_g_Y > 20) OR (d_g_Z < -20 or d_g_Z > 20))	81%

BerryIMU gestures with their corresponding commands, as well as the accuracy percentages of each gesture being successfully recognized as its corresponding command, in addition to the variable measured alongside its threshold. Each gesture/command combo underwent 27-38 trials, wherein no output was observed by Sierra such that whether or not a gesture worked correctly was unknown until after the trial ended. AccYangle is a reading taken from the original BerryIMU code Sierra modified from lab 4. Difference_gyro_X, difference_gyro_Y, and difference_gyro_Z are faux derivatives that Sierra created in order to detect change over time between readings of the gyroscope's sensors, allowing her to detect large changes in its readings in order to accurately recognize a gesture. These readings were all done with the case on the BerryIMU/Raspberry Pi/battery pack, with the exception of the fall_detection_data, where the wire to be used with the case was not long enough to test dropping the BerryIMU.