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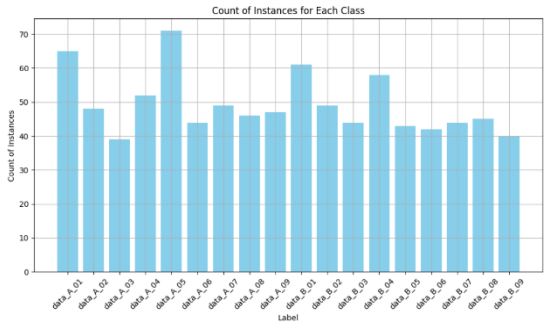
gestureTIFY: aIOT project derivative

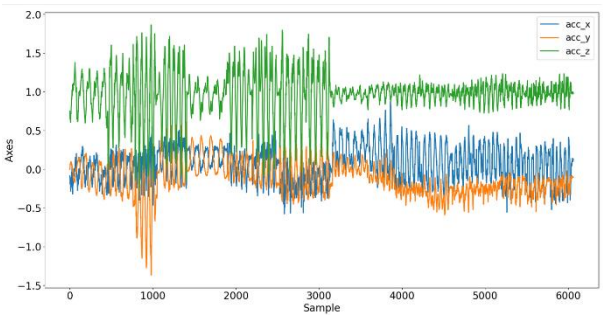
Let's firstly state that it's been our first contact with a lot of the technologies used including but not limited to python, mongoDB, jupyter as well as the ML processes themselves. Thus we trust understanding will be given as due to lack of experience and lots of errors caused by, for example jupyter, lead as to implement bad practices like double-declaring functions as the scope didn't work always etc. Also we're in a semester with 4 projects so time was also an issue.

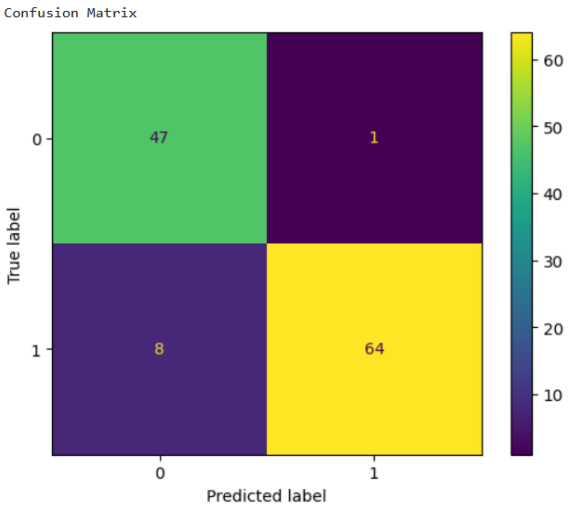
Some general info, the movements tracked are those of hand movement going right-left as classA and top-bottom as classB. We chose those as Nick being an audiophile liked the futuristic concept of later using those as music playback controls for track switching and volume changing respectively. Also the 5th publication provided loads of info about the measurement parameters on those movements that may have helped us achieve the 94% precision score using SVM.

Some more technical info, the movement samples each contain 5 repetitions of the movement considering the rule of starting-ending the recording while moving. We took 9 samples per class, from 3 different people. Also we used only the accelerometer.

You may run yourselves the code located in the .zip following the instructions given on the README.md or from the github repository (https://github.com/NickMavrias/GestureTIFY) which is now private, excluding you, for fairness reasons of the course and will go public after the DDL. Please check the attribution I gave and if you need something done differently contact me at nikos.mavrias@eestecpatras.gr







	precision	recall	f1-score	support
horizontal	0.85	0.98	0.91	48
vertical	0.98	0.89	0.93	72
accuracy			0.93	120
macro avg	0.92	0.93	0.92	120
weighted avg	0.93	0.93	0.93	120