Guidelines for Level 5: Testing for a long period of time

EE180D, Fall 2013

Deadline: 5pm on Wednesday, November 27. Right before the Thanksgiving break.

States:

- Sitting (new!)
- Standing
- Walking, flat ground, slow/normal
- Walking, flat ground, fast
- Walking, up slope, slow/normal
- Walking, up slope, fast
- Walking, down slope, slow/normal
- Walking, down slope, fast
- Climbing stairs, one stair per step, slow/normal
- Climbing stairs, one stair per step, fast
- Climbing stairs, two stairs per step, slow/normal
- Climbing stairs, two stairs per step, fast
- Descending stairs, one stair per step, slow/normal

Testing description:

- 15+ minutes of continuous activity
- Mix-in every state, more than once if possible
- Record times for each activity, use video recording for verification

Submission:

Based on the recorded times, you will be able to calculate the time spent performing each activity (state). This will be your "ground truth". You can then calculate the amount of time that you classified to be performing each activity.

We would like to see something similar to the following: (1sec resolution is acceptable)

Activity	Truth Duration	Measured Duration	Error
Sitting	23.2 sec	23.3 sec	+0.1 sec
Walking	10.5 sec	10.5 sec	0.0 sec
Walk_flat_norm	18.4 sec	18.1 sec	-0.3 sec
...			

It would also be interesting to see a plot similar to the one the toolkit provides (with red dots and blue circles) to see where errors were made. One can imagine errors "canceling out" others to create "perfect" results and this plot would expose these instances.

Notes:

- While training, the data does not need to be recorded in a "random" fashion like the test will be. You can systematically step through each state. You can also use older recordings and stitch them together.
- The *Truth Duration* will be calculated based on recorded times. The *Measured Duration* for each state will be calculated based on the number of windows were classified as that state. You will need to calculate this by extracting the data that represents the classifications and creating a MATLAB script.
- Remember to note the time where the synchronization-event was performed, as it will be an important "landmark" in your data. Also, this should be the only part of the data that is ignored.
- Organization will help you greatly.

Please email us with any questions. This is intended to be a less-structured Level, but if the instructions or objective is unclear, let us know.

Good luck!