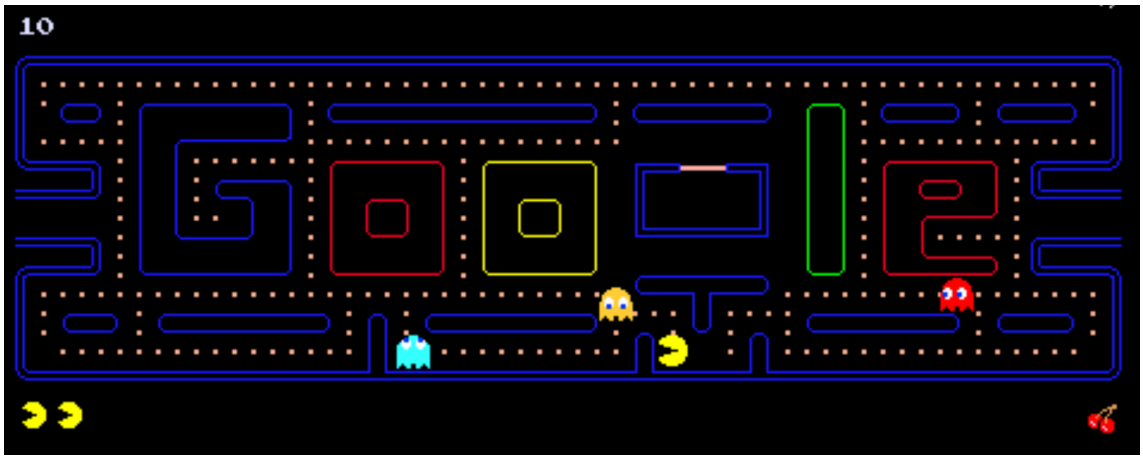
ESET 359
Fall 2021
FINAL PROJECT

Task: Create an EMG controller for eGame.

Requirement:

1. You need to show the two-channel of the EMG signals can be recorded and converted to control signals (binary or 4-levels) using the 359 Lab Kit.
2. Use the EMG based control signal to activate the four directional buttons(←↑→↓) of your keyboard (Hint: Use "UP", "DOWN", "LEFT", "RIGHT" instead of "W", "S", "A", "D" from Lab4 to programmably press the direction button).
3. Define your own control strategy. (Hint: you can use: 1) one EMG channel to control the left and right, use the other channel to control up and down, or 2) Use two channels together to control the direction: Low-Low -> left, Low-High -> right, High-Low->up, High-High -> down)
4. Try this online pacman to test your EMG controller: https://www.google.com/logos/2010/pacman10-i.html



5. Record your demo and upload the video file (or submit the link of the recording) on the CANVAS.
6. In your video file, you need to show the pacman movements are promptly controlled by your muscle activities(EMG).
7. In your report or video, you need to show the log file of the EMG outputs with: (1) either raw data or filtered data, (2) directional button being

activated, and (3) time stamps. They should be saved in an excel (or any equivalent) file.

Final project report: You need to write 2-page final report by IEEE format.

download the IEEE word template from the following link:

https://www.ieee.org/conferences/publishing/templates.html

1. Need to include at least 2 figures (circuit connection, block diagram).
2. Need to include at least 4 references (could be about EMG, or about signal processing, but no class notes, no lab manuals).
3. Need to include at least 1 table.
4. Should follow the IEEE format (font, alignment, indentation, etc.)
5. Exceptional work can get some extra points: up to 15% of the total score.