**ECE 411 Homework: 3 Project Ideas**

Idea 1: ASL Glove (cont. from ECE 212)

* Brief description: Device that translates ASL to English or other languages in real time to text and/or speech. Optimized for better processing and speed
* List of sensors: Gyroscope, Accelerometer, Resistive flex sensor
* List of controllers: ESP32 or Arduino Nano
* List of actuators: Phone App

Idea 2: Tile Rhythm Game

* Brief description: Similar to BopIt™, but a tiled “drum pad” with X number of pads that light up and play a sound in a particular order which the user then has to repeat back.
* List of sensors: Capacitive or Piezo force sensors
* List of controllers: ESP32, RPi Pico, or Arduino Nano
* List of actuators: LEDs, sound

Idea 3: LED20

* Brief description: D20 that lights up the rolled number, may play sound upon rolling a 1 or 20. May detonate upon rolling 2 consecutive 1s
* List of sensors: Gyroscope, Accelerometer,
* List of controllers: ESP32-S3 or RP2040
* List of actuators: LEDs, sound

Why we chose LED20: The idea seems reasonable to achieve within the timeframe of the class. Additionally, it checks all the project requirement boxes.

