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ECE 411

ECE 411 - Alternative Practicum Proposals

Speed Detector

Concept:

Passive Speed Detector using photodetecting sensors.

Summary:

Measures and calculates a rough estimate of distance over time, using the relative change of light intensity to determine the speed of oncoming vehicles. Additional sensors for correction may be required. Optionally, the sensor would be remote controlled. Output would be displayed on LCD screen.

Vitruvian Pigeon Belt

Concept:

A Digital Compass Belt as a haptic feedback solution for magnetoception in humans.

Summary:

A wearable digital compass belt using a magnetometer, would have four low powered vibration motors installed around the belt. The vibration motor closest to the direction of true north would gently pulse in order to provide the wearer a constant awareness of the four cardinal directions.

Weight Watcher Insoles

Concept:

Wearable shoe inserts to measure a person's weight.

Summary:

Sensor film or other force sensitive resistors integrated with shoe insoles would measure a person's weight and send the data to a controller for processing. User input would be required. Weight and other metrics would be displayed on a seven-segment display or LCD screen.

Hand motion controlled RGB display

Concept:

Control an RGB 7-segment display with flex sensors attached to the hand.

Summary:

A wearable glove capable of sensing different hand gestures that would effectively control the ouput of a 7-segment display. Example demonstration would involve the user counting with their fingers and seeing the correct numerical output on the display.