Smart Turn

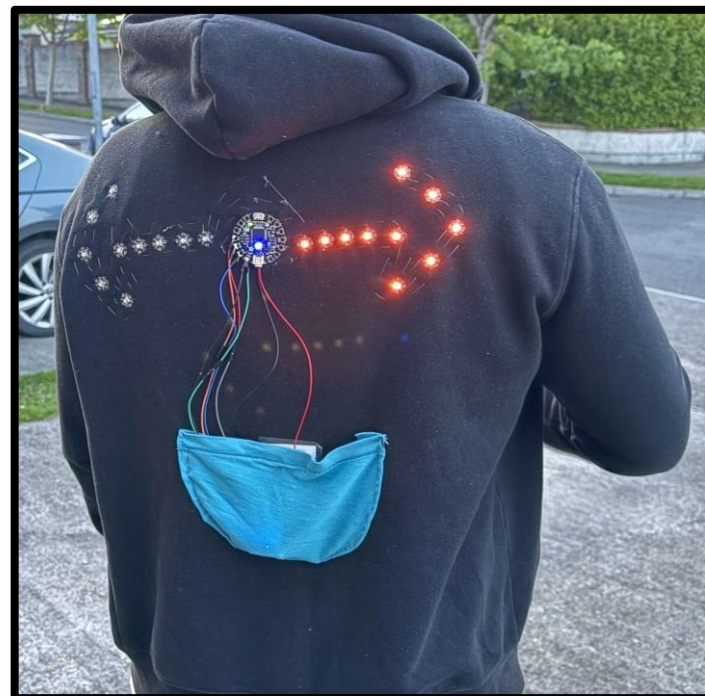**Students:** Josh Casey and Jakub Czerniejewski, BSc in Computer Science   **Supervisor:** Dr.David Sinclair

What is Smart Trun

Smart Turn is an IoT device to act as a safety solution for cyclists and scooter users of the road that utilises a LED turn signal with turn by turn navigation. It consists of wearable LED indicators controlled via a touch sensor mounted to the handle bars while also having a display showing navigation. The aim is to reduce accidents and phone thefts while making cyclists more visible and phones less accessible while also decreasing distractions that may be caused from the phone. The implementation combines Arduino hardware with an Android Mobile application in Flutter serving as a bridge via Bluetooth between the hardware and the navigation system.

Technologies and Components Used
Flutter
Bluetooth Classic & BLE
C/C++
Dart
Geolocation & Navigation
Arduino IDE

Arduino Uno
Adafruit Flora
HC-05 Bluetooth Module
Adafruit MPR121 Touch Sensor
Adafruit 1.9" 320x170 Colour IPS TFT Display – ST7789
Adafruit Bluefruit LE UART Friend
Adafruit Neo Pixels

Ollscoil Chathair
Bhaile Átha Cliath
Dublin City University