

CUES-Hackathon Hosted By ARM

Connected Clothing Project

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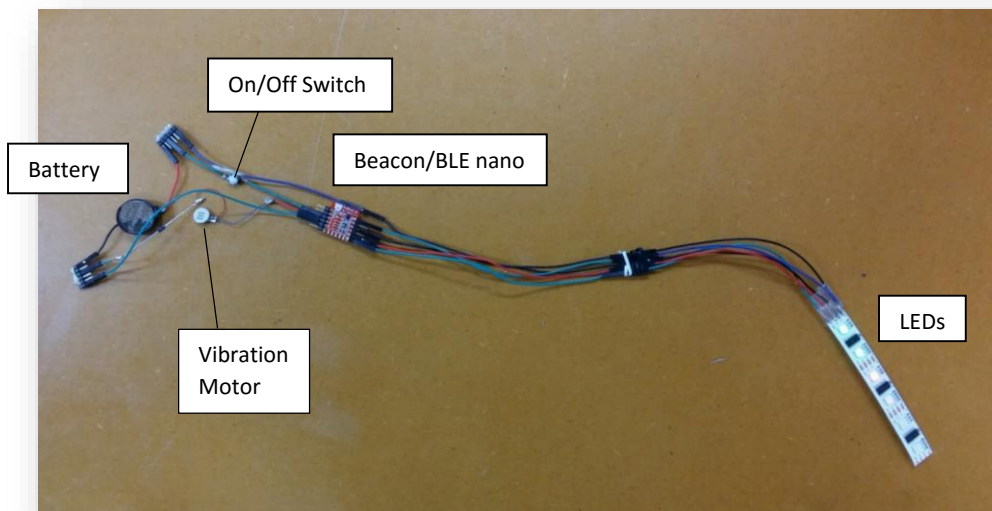
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Our aim for this project was to create an easy to use but expressive piece of wearable tech which will help connect users and things over short distances in busy crowds and at places of interest.

We decided to go with a shirt that incorporates a LEDs, a battery, a vibration motor and a beacon to create clothing that can connect with other people's clothes and stationary beacons at points of interest, and feed this information back to the user as easy to see visual cues and haptic feedback.

Our design is as follows; a simple device which would rest inside the shirt along the collarbone.

Before turning on, the device would be practically unnoticeable, with only the tell-tale lumps of wires and batteries giving away the circuit underneath which could be easily hidden if designed into the shirt, with conductive thread and flatter components.



The On/Off switch would sit on the right shoulder, a simple reach with the left arm towards the shoulder and then a button press activates the device, which lights up the LEDs closest to you with your colour. This now means the shirt is broadcasting as a beacon and searching for other clothes' beacons.

Upon seeing an advertisement from a previously linked nearby friend's

beacon, the LEDs on the shirt would light up with that friend's colour, and vice-versa. This could be done through a social media app.

This could also be used to interact with stationary objects, such as emit-only beacons at points of interest which would briefly flash the LEDs on your clothes and provide haptic feedback through the vibration motor to alert the wearer of something nearby.

Problems we encountered were the flex resistor potential divider voltages not being picked up by the BLE nano device, decoding iBeacon signals turned out difficult to code, and how it was impossible to debug the nano device while using the RGB LED strips.

Our device innovates clothing to be connected, as clothing is something no one goes without (usually). It also hides it so as to not be obvious unless the device is on and functional.