Feasibility Study for Sensor Detection Web Application

The system we propose aims to enhance privacy awareness and security in IoT-sensed environments by detecting and analyzing sensors in a given space. Our proposed application can contribute to the following organizational objectives. Our primary purpose is to assist individuals in identifying potential risks of sensors and devices in a shared or unknown environment.  The application can also be used by organizations such as universities to monitor unauthorized devices in classrooms, conference rooms, offices , etc. Additionally, our proposed application can be used by academics for research purposes, specifically research teams that are studying privacy risks in IoT ecosystems.

We estimate that the application can be developed within one semester if the scope is well defined. Our budget requirements are minimal to non-existent as we will primarily use existing web technologies, open-source libraries and APIs. We plan to use React.js (for frontend application design), Node.js (for backend application design) and Bluetooth APIs(for sensor detection). We also aim to use smartphone applications to emulate Bluetooth signals, such as “Beacon simulator”.

Our system can run as a standalone application but can also potentially be integrated with existing security monitoring tools if required. For example, it could be linked to university security systems or user profiles for device logging.

Update: Based on our meeting with our sponsor, we have decided to move from a web based application, to a mobile application. This does not affect the estimation given above as the technology stack we will be using will still remain open sourced. The budget will also remain relatively low as there are cheap bluetooth beacons available that we can utilize.