



BRAVE INNOVATION HIGHLIGHT



Brave

COMPANY OVERVIEW

Brave is a multi-stakeholder cooperative that is dedicated to preventing fatal drug overdoses since 2018. Working with harm-reduction leaders, Brave develops and deploys IoT technologies using sensors and mobile apps to prevent opioid-overdose deaths. The company aims to augment existing drug use supervision and overdose response techniques and protocols using digitally mediated and community-based networks.

LOCATION: VANCOUVER, BC

TECHNOLOGY



IoT

PUBLIC WASHROOMS - A TYPICAL DRUG INJECTION SITE

In 2018 alone, 23 fatal overdoses occurred in public washrooms across British Columbia based off of an opioid overdose epidemic, deemed as a public health emergency in the province. Public washrooms offer privacy for drug users, which also leads to the absence of a response when an overdose occurs. In response, businesses and organizations have adopted washroom check practices where staff members check on the washroom at predefined intervals of time. While effective, such a system can lead to increased workload and stress levels on staff. With the right technology to augment existing practices put in place, overdoses in public bathrooms can be prevented.

ODetect - PREVENTING OVERDOSES IN PUBLIC WASHROOMS

To prevent the problem of opioid overdoses in public restrooms, Brave created ODetect – an IoT based solution that prevents drug overdoses by non-invasively monitoring indoor spaces. Compared to infra-red motion detectors, ODetect uses pulse doppler radar modules reducing the number of false alarms created. Along with the movement sensor, a wireless/magnetic door sensor is also installed indicating whether a person is in the washroom or not. ODetect sensors monitor any lack of movement or breathing in public bathrooms. From there, the data is transferred to Brave's cloud application where it's analyzed. If the system determines an emergency situation, an alert is sent to a responder's phone so they can check the bathroom immediately.

BENCHMARKING AND IMPROVING ODETECT'S FUNCTIONALITY

Brave came to CENGN to test the functionality and scalability of the system's containerized architecture. The ODetect application was transferred from a monolithic architecture onto a Kubernetes native containerized deployment. On the CENGN testbed, Brave also conducted a benchmark test proving that their application could handle 200 users and 200 user locations simultaneously. CENGN and Brave reworked ODetect's architecture, increasing its performance by 4x compared to the first application's test, even with the same hardware. Brave is now looking to new architectures that will improve ODetect's performance to handle 1000 installations.

“CENGN was an incredibly helpful resource in learning to use Kubernetes and monitor the performance of our application giving us valuable instructions on provisioning a cluster ourselves.”

Sampath Satti, Hardware

Lead, Brave



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