Research

Ts. Dr. Mohd Izham develops Track Me app with geofence to monitor children’s movement

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PEKAN, 30 June 2022 – Cases of child loss worldwide and in Malaysia particularly are not new.

In fact, these disappearances often also end in murder or serious abuse.

A lecturer from the Faculty of Computing (FK), Universiti Malaysia Pahang (UMP), Ts. Dr. Mohd Izham Mohd Jaya, 39 has developed a Track Me app with geofence as an added value that will help parents monitor the movement of their children and logistical assets.

The development of the logistics industry in Malaysia, especially the increase in organisations offering ground transportation services, is a catalyst for executing this research.

Both factors require a real-time tracking system through a smartphone app that seeks to help users get precise and immediate information.

The research began in May 2020 and was completed in July 2021 in collaboration with Expert@Work Sdn. Bhd. for developing additional functions of the Track Me app and student of the Faculty of Computing, Goh Xin Tong.

He said that Track Me has two main components: a device to track real time location using Global Systems for Mobile (GSM) or General Packet Radio Service (GPRS) and a smartphone app that displays the location and route travelled by the device carrier.

“This app has a geofence function that allows users to set the time and coordinates of the safe location of the device carrier such as homes, schools and nurseries.

“It will warn immediately if the device carrier exits or enters the geofence area.

“As an added feature, Track Me will also notify users if the device carrier leaves the geofence area at an inappropriate time,” he said.

According to Ts. Dr. Mohd Izham, although the Track Me app targets children and parents as the primary users, it is a universal product that can help organisations track vehicle asset movements and track seniors with memory disorders.

“To use this app, the user must install a SIM card from any telecommunication operator to the tracking device unit.

“The carrier should carry the tracking device to ensure that the latest coordinates are always sent to the Track Me app.

“Nowadays, Track Me tracking devices can be stowed into school bags, pockets or mounted on vehicles that want to be tracked.

“The carrier coordinates are then sent to the cloud database and will be displayed on the Track me smartphone app for remote monitoring by the users,” he said.

He added that in order to set the geofence information, the user could search for locations using the address in the Track Me app and subsequently determine when the carrier should be at the location.

“Track Me users can set more than one geofence location and can see the route that the carrier has followed at the time specified by the user through the dedicated menu options in the app.

“In order to ensure the effectiveness of the Track Me app, users will be notified by smartphone notification if the carrier of the tracking device leaves the location, enters the location or fails to present to the geofence location at a predetermined time.

“Track Me aims to assist caregivers in monitoring children’s movements especially when busy working or away from the child’s location,” he said.

In addition to providing confidence to caregivers, Track Me can help caregivers identify the child’s final location prior to the loss and narrow the scope of searches by authorities.

Because Track Me is universal, it can also assist in monitoring the movement of individuals or an organisation’s logistical assets.

He added that they plan to downsize the Track Me tracking device and make it more wearable.



Ts. Dr.

Mohd Izham

“In addition, additional functions such as the emergency call function and display of information regarding the carrier environment will also be added.

“To support the functions of Track Me app in multiple logistics asset tracking, we are also developing a dashboard display that can add value to logistics asset management.

“The Track Me app is not yet on the market and is expected to be sold for around RM300 per unit,” he said.

He said, tracking individuals or assets is important to society and the logistics industry, especially for more efficient monitoring and management.

“For example, residents around Pekan can know the movement of the bus so they can optimise time and plan trips.

“Likewise, in the context of the digitalisation of UMP, students can find out information about the movement of buses on campus.

“Within the scope of the logistics industry, monitoring asset movements can help users design maintenance schedules in addition to increasing user confidence,” he said.

Track Me is universal and can be adapted to the needs of industry and society and is not limited to monitoring the child’s movement.

In addition to the Track me app, he and his team also produced SIGMA+ products, namely an automation system for indoor vegetable cultivation equipped with a crop disease determination system using edge-AI technology.

This product bagged a gold medal in the 2022 Creation, Innovation, Technology & Research Exposition (CITREx).

In 2021, he was appointed as a consultant for developing the analytical model of the Malaysian Youth Index and Malaysian Sports Culture Index, Institute for Youth Research Malaysia (IYRES), Ministry of Youth and Sports Malaysia.

Currently, he is the principal researcher for five research grants and the assistant researcher for four other grants.

The app also bagged a gold medal and the Computing and Applied Science Award at CITREx 2021.

At the International Invention, Innovation and Technology Exhibition (ITEX) 2021 held at Kuala Lumpur Convention Centre from 13 to 14 December 2021, this app managed to bring home a bronze medal.

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