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Private Human Addressing System based on Cameras and Sensors

This data transmission protocol securely associates individuals in a camera's view with their smartphones using unique motion patterns for continuous, real-time data transfer.

Video surveillance cameras are widely used to identify people for security purposes. Currently, there is no existing end-to-end and real-time system that digitally associates people within the camera's view with their smartphones.

Researchers at Purdue University have developed a data transmission protocol that utilizes a person's unique motion pattern to identify addresses for communication. After a person's smartphone receives a wireless broadcast from the cameras, it can locally compare the motion address it received against its own motion sensor data. If it is a good match, it will accept the packet. The use of a low-dimensional code prevents leakage of the user's walking behaviors, which prevents potential hackers from inferring the motion patterns of users. The system requires no data from users and utilizes attributes, such as height, walking pattern, stride length, and posture, to identify subjects. As opposed to other transmission methods, such as Bluetooth beacons, this technology allows for continuous data transfer as subjects moves about.

Advantages:

-Associates a person's motion pattern to identify addresses for communication

-Achieved a 99.7 percent match effectiveness

-Does not require additional infrastructure

-Secure

Potential Applications:

-Mobile device marketing

Technology ID

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Category

Artificial Intelligence & Machine Learning/Computer Vision & Image Recognition

Robotics & Automation/Perception & Sensing

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View online

-Mobile device information delivery

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Keywords: Motion pattern identification, smartphone association technology, real-time people identification, data transmission protocol, mobile device marketing technology, security cameras and smartphones, unique motion pattern communication, wireless broadcast and motion sensor data, continuous data transfer technology, secure data transmission, Cameras, Computer Technology, Electrical Engineering, Mobile Apps, Sensors, Smartphones, Surveillance, Wireless