66. Title: IoT Based Person Identification System Using Footfall Signature

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Keywords: Imposter detection, intruder detection, Security, Home automation

Domain: Smart Technologies

Summary: An intruder detection system (based on anomaly detection) is developed for detection of friends and foe. The device first predicts if an individual's footstep signature belongs to the pre-registered database. If the individual is legitimate, then the device predicts its identity. Else, it generates a warning signal. Individuals are not required to orient or position themselves in a special manner, device captures walking pattern only. It is useful in the military establishments/Smart homes for security and home automation/ Smart buildings for providing automatic access and detecting imposters.

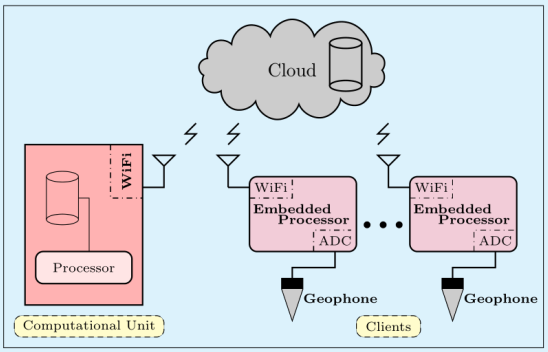

Figure: System architecture for person identification using seismic sensor

Advantages:

- It identifies registered users with an accuracy of 90% by using features from only two consecutive footsteps Sensor data are less affected by environmental parameters
- The sensor is easily camouflageable.
- Beneficial for sentries posted in high-security zones (bureaucratic building), military camps, army check posts etc.
- The seismic signals based biometric systems are free from data theft/leakage as no significant information of an individual can be obtained by studying his/her raw seismic signal.
- The seismic signals based biometric systems any special orientation or positioning of the individual for authentication, and seismic data do not interfere with the individual's privacy

Applications: Surveillance, Safety and Security based industries

Scale of Development: A functional prototype architecture is developed and tested in Laboratory environment

Technology Readiness Level: 4

IP Status: Indian Patent Application 201911050076