UNSUPERVISED WIFI-ENABLED DEVICE-USER ASSOCIATION FOR PERSONALIZED LOCATION-BASED SERVICES

Tech ID: 29365 / UC Case 2018-164-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,035,166	07/09/2024	2018-164

BRIEF DESCRIPTION

With the emergence of the Internet of Things in smart homes and buildings, determining the identity and mobility of people are key to realizing personalized, context-aware and location-based services - such as adjusting lights and temperature as well as setting preferences of electronic devices in the vicinity.

Conventional electronic user identification approaches either require proactive cooperation by users or deployment of dedicated infrastructure. Consequently, existing approaches are intrusive, inconvenient, or expensive to ubiquitously implement. For example: biometric identification requires specific hardware and physical interaction; and vision-based (video) approaches need favorable lighting and introduce privacy issues.

To address this situation, researchers at UC Berkeley developed an identification system that uses existing, pervasive WiFi infrastructure and users' WiFi-enabled devices. The innovative Berkeley technology cleverly leverages attributes such as the MAC address and RSS of users' WiFi-enabled devices. Furthermore, the Berkeley approach is facilitated by an unsupervised learning scheme that maps each user identification with associated WiFi-enabled devices. This technology could serve as a vital underpinning for practical personalized context-aware and location-based services in the era of the Internet of Things.

SUGGESTED USES

Personalized, context-aware and location-based services

ADVANTAGES

- Uses existing infrastructure and devices, so lower cost than conventional alternatives
- Nonintrusive and convenient for users
- Does not have rampant privacy issues

RELATED MATERIALS

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RELATED TECHNOLOGIES

- Device-Free Human Identification System

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Device-Free Human Identification System

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OTHER INFORMATION

KEYWORDS

WiFi, Location-Based Services, Internet of Things

CATEGORIZED AS

- **Communications**
  - Internet
  - Networking
  - Wireless
- **Computer**
  - Software
- **Sensors & Instrumentation**
  - Position sensors

RELATED CASES

2018-164-0

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