UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Spoofing Attacks Against Wireless Localization

by

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For the Ph.D. degree in Computer Science and Engineering

GPS-free outdoor localization becomes popular because of the expanding scale of WiFi deployments in metropolitan areas. As a substitution or complement to the Global Positioning System (GPS), WiFi localization systems provide very accurate results in WiFi-rich area. However, the current WiFi localization systems are not robust to WiFi external signal attack. In this study, we implement both static and dynamic external signal attacks to attack the navigation system of a smartphone using a portable programmed IoT device ESP8266. We also demonstrate that the WiFi based localization and navigation are vulnerable to external signal attacks by testing this attack on an Android phone. Finally, we discuss possible defense solutions and the future work. Our study indicates that existing navigation system is vulnerable to external signal attacks and there is an urgent need for defense solutions.

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9:00 AM

Online Microsoft Teams

Please email chengbin@usf.edu for more information.

THE PUBLIC IS INVITED

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