Secure Distance Estimation - Proximity to Positioning

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Résumé

A wide variety of applications, such as modern payment systems, access control for critical infrastructures, and healthcare applications like contact tracing, depend on location and proximity information. There are multiple ways to establish physical distance between two entities, most of which are prone to distance modification attacks and can lead to loss of property (e.g., cars with keyless entry systems) and human life (e.g., vehicle collision). The increasing need for secure distance measurement has motivated academia and industry to explore new secure designs and integrate them into the upcoming standards, including IEEE 802.15.4z (Ultra-Wideband), IEEE 802.11mc/az (WiFi), and 3GPP 5G. In this talk, I will present how to enable secure distance estimation for proximity and positioning applications.

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