

Presentation or poster

Tiek: Two-tier Authentication and Key Distribution for Wearable Devices

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Wearable devices, such as implantable medical devices and smart wearables, are becoming increasingly popular with applications that vary from casual activity monitoring to critical medical uses. Unsurprisingly, numerous security vulnerabilities have been found in many of these devices. Yet, research on physical measurement-based authentication and key distribution assumes that body-worn devices are benign and uncompromised. We present a novel authentication and key distribution protocol which addresses this issue. We utilize sensor fusion to perform device authentication and key distribution simultaneously but through separate means. This effectively creates a two-tier authorization scheme that enables devices to join the network while protecting them from each other.