

Radio Frequency Fingerprint Identification in Physical Layer Security

Abstract: Radio frequency (RF) fingerprint is the inherent hardware characteristics and has been employed to classify and identify wireless devices in wireless communications. This talk will cover our recent RF fingerprint identification research. We first review RF fingerprint identification technique. We then propose our practical studies with results collected from software defined radio (SDR) experimental platform. We have carried out a comprehensive investigation on RF fingerprint identifications, i.e., RF feature extraction, deep learning based classification, and signal preprocessing, in a number of experiments in different wireless communication systems such as WiFi, Zigbee, GSM and LoRa. We will conclude the talk by suggestions for the remaining research challenges in RF fingerprint identification area.