SEMINAR NOTICE:

Securing Wireless Communication against Adversarial Interference

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Monday, July 23
3:00 p.m.
CSL 301

Abstract:

With the wide proliferation of wireless devices, securing information sent over the wireless medium becomes vital. The wireless setting, however, introduces a number of challenges and limitations that cannot be fully resolved using traditional security solutions. These challenges mainly originate from the open and broadcast nature of the wireless communication medium.

In this talk, I address this problem and propose solutions tailored to wireless communication. I focus on the vulnerabilities to a wide range of communication interference attacks in which attackers interfere with the communication in order to prevent the reception of the correct, timely information transmitted by the sender. In particular, my talk covers the following aspects: (i) I analyze the vulnerability of wireless radio transmissions to signal-layer attacks, (ii) I describe novel techniques for enabling communication under jamming attacks without shared secrets, and (iii) I investigate spoofing attacks against satellite navigation systems.

Biosketch:

Christina Poepper is a postdoctoral researcher at the Institute of Information Security at ETH Zurich, Switzerland, where she received her Ph.D. in December 2011. Prior to her Ph.D., she received the Dipl.-Ing. degree in Computer Science from ETH Zurich (2005) and worked at the European Space Agency, Paris (2005-2007). Her primary research interests are security and privacy in the context of wireless communications, jamming-resistance, and secure localization, among others. More details: http://www.syssec.ethz.ch/people/christina.