NORTHWESTERN UNIVERSITY

Computer Science Lecture Series

Transient Authentication for Mobile Devices

Mr. Mark Corner

University of Michigan

12:30-1:30pm
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Room 381 - Computer Science Dept.

Abstract:

Laptops are vulnerable to theft, greatly increasing the likelihood of exposing sensitive information. Unfortunately, encryption alone does not address this problem. Current systems require users to imbue them with long-term authority for decryption, but that authority can be used by anyone who physically possesses the machine. Forcing the user to frequently reestablish his identity is intrusive and discourages use.

This tension between usability and security is eliminated through Transient Authentication, in which a small hardware token continuously authenticates the user's presence to the laptop over a short-range, wireless link. In this talk I present the four principles underlying Transient Authentication, and describe two concrete applications of the principles: protecting a file system and protecting application data. The ZIA encrypted file system requires decryption keys from the token; this dependency prevents access while the user is absent. Applications can be protected transparently by encrypting in-memory state when the user departs. This technique is effective but indiscriminate. Instead, applications can utilize an API for Transient Authentication, protecting only sensitive state.