The Internet of Risky Things: Trusting the Devices That Surround Us

By Sean Smith

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By 2020, the Internet of Things (IoT) will consist of millions of computational devices intimately connected to real-world aspects of human life. In this insightful book, Professor Sean Smith, who worked in information security long before the web appeared, explains that if we build the IoT the way we built the current internet and other information technology initiatives, we're headed for trouble.

With a focus on concrete solutions, *The Internet of Risky Things* explains how we can avoid simple flaws that have plagued several dramatic IT advances in recent decades. Developers, engineers, industrial designers, makers, and researchers will explore "design patterns of insecurities" and learn what's required to route around or fix them in the nascent IoT.

- Examine bugs that plague large-scale systems, including integer overflow, race conditions, and memory corruption
- Look at successful and disastrous examples of previous quantum leaps in health IT, the smart grid, and autonomous vehicles
- Explore patterns in coding, authentication, and cryptography that led to insecurity
- Learn how blunders that led to spectacular IT disasters could have been avoided

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Editorial Review

About the Author

Professor Sean Smith has been working in information security--attacks and defenses, for industry and government--since before there was a Web. In graduate school, he worked with the US Postal Inspection Service on postal meter fraud; as a post-doc and staff member at Los Alamos National Laboratory, he performed security reviews, designs, analyses, and briefings for a wide variety of public-sector clients; at IBM T.J. Watson Research Center, he designed the security architecture for (and helped code and test) the IBM 4758 secure coprocessor, and then led the formal modeling and verification work that earned it the world's first FIPS 140-1 Level 4 security validation.

In July 2000, Sean left IBM for Dartmouth, since he was convinced that the academic education and research environment is a better venue for changing the world. His current work, as PI of the Dartmouth Trust Lab and Director of Dartmouth's Institute for Security, Technology, and Society investigates how to build trustworthy systems in the real world.

At Dartmouth, many of his courses have been named "favorite classes" by graduating seniors. His book Trusted Computing Platforms: Design and Applications (Springer, 2005) provides a deeper presentation of this research journey; his book The Craft of System Security (Addison-Wesley, 2007) resulted from the educational journey.

Sean has published over one hundred refereed papers; been granted over a dozen patents; and advised over three dozen Ph.D., M.S., and senior honors theses. He and his students have won several "Best Paper" awards.

Sean was educated at Princeton and CMU, and is a member of Phi Beta Kappa and Sigma Xi.

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