Medical Device Security: The First 165 Years

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ABSTRACT
Today, it would be difficult to find medical device technology that does not critically depend on computer software. Network connectivity and wireless communication has transformed the delivery of patient care. The technology often enables patients to lead more normal and healthy lives. However, medical devices that rely on software (e.g., drug infusion pumps, linear accelerators, pacemakers) also inherit the pesky cybersecurity risks endemic to computing. What's special about medical devices and cybersecurity? What's hype and what's real? What can history teach us? How are international standards bodies and regulatory cybersecurity requirements changing the global manufacture of medical devices? This talk will provide a glimpse into the risks, benefits, and regulatory issues for medical device cybersecurity and innovation of trustworthy medical device software.

Categories and Subject Descriptions
E.0 [General]

Keywords
Cybersecurity; Medical device security.

BIO


Kevin Fu is credited for establishing the field of medical device security beginning with the 2008 IEEE paper on defibrillator security. Kevin is Chief Scientist of Virta Labs, Inc. and Associate Professor in EECS at the University of Michigan where he directs the Archimedes Center for Medical Device Security and the Security and Privacy Research Group (SPQR).

Kevin has testified in the House and Senate on matters of information security and has written commissioned work on trustworthy medical device software for the Institute of Medicine of the National Academies. He is member of NIST Information Security and Privacy Advisory Board, the CRA Computing Community Consortium Council, and the ACM Committee on Computers and Public Policy. He was named MIT Technology Review TR35 Innovator of the Year. Kevin served as program chair of USENIX Security during a period of unprecedented growth. He co-chairs the AAMI Working Group on Medical Device Security. He served as a visiting scientist at the Food & Drug Administration, the Beth Israel Deaconess Medical Center of Harvard Medical School, Microsoft Research, and MIT CSAIL. Fu received his B.S., M.Eng., and Ph.D. from MIT. He earned a certificate of artisanal bread making from the French Culinary Institute.

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