The Economics of Cybersecurity

Terrence August
Associate Professor, Rady School of Management

CURRENT RESEARCH

Understanding the role of incentives to improve cybersecurity decisions

As both public and private entities increasingly rely on the Internet, communications systems, and electronically-transmitted data to perform business functions, vast amounts of data are stored online and are becoming vulnerable to hackers and other cyber threats. Governments must assume an active role in maintaining the reliability and security of the global cyber infrastructure. However, securing the cyber infrastructure presents difficult challenges since it requires coordinating the efforts of government, the private sector, and society. Dr. Terrence August, Associate Professor at the Rady School of Management at the University of California, San Diego, is tackling cybersecurity from a microeconomics approach, evaluating the different incentives offered to different parties in providing security for networks. When misaligned incentives lead to outcomes with destructive social consequences, there is a natural call for government involvement. Currently though, the government's strategy has been mostly suggestive. However, in the face of increasing security attacks and associated economic losses, the government may need to adopt a more hands-on approach to securing the Internet. Dr. August is developing models to gauge the equilibrium level of security and determine the ideal level of government involvement. To strategically craft policies aimed at the protection of the Internet, we must develop a better understanding of how the decisions of individual parties affect aggregate measures of security and social welfare. This is precisely where Dr. August's research lies. He has built some of the foundational economic models that rigorously study how the level of cybersecurity is the result of economic agents making...

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AFFILIATION

University of California, San Diego

EDUCATION

- Ph.D. in Graduate School of Business 2007,Stanford University
- M.S. in Financial Mathematics 2005,Stanford University
- M.S. in Chemical Engineering 1998,Vanderbilt University
- B.E. in Chemical Engineering 1998,Vanderbilt University

AWARDS

- 2013 AIS Best Publication of the Year
- Most Valuable Professor Award
- Finalist for "2013 Best Paper Award in Information Systems"
- Best Conference Paper
- Excellence in Teaching Award

RESEARCH AREAS

Technology, Cybersecurity, IOT, Devices, Data, Global Policy

FUNDING REQUEST

Your contributions will be used to acquire, train, and employ human resources, including Ph.D. students, postdocs, and undergraduate students, and fund Dr. August's lab so that he can continue to research year-round. Due to the nature of his work, there is not much material overhead, and the funding will go directly toward the development of economic models that improve the state of cybersecurity. Dr. August's work is mathematical, so the acquisition of advanced computational equipment is critical for simulation and accuracy.