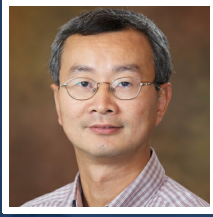# Smartphones: Attack and Defense

Wenliang (Kevin) Du
Professor, Electrical Engineering & Computer Science

CURRENT RESEARCH

Defending smartphone systems by exposing fundamental flaws in system design

Mobile technology is on the forefront of cutting-edge technology; the number of smartphone users worldwide will surpass two billion in 2016. Such a wide adoption of smartphones comes with great security risks, so it is extremely important to tighten smartphone security. Dr. Wenliang (Kevin) Du, Professor of Electrical Engineering & Computer Science at Syracuse University, exposes loopholes in Android designs to "find problems before hackers do," to safeguard the fundamental phone systems and create ways to defend against attacks." A pioneer in computer security, Dr. Du works with developers in industry to present problems that need attention, envisioning a hack-proof future. The industry cannot afford time to probe deeply into all the potential flaws exhibited by the system; it can only provide patches against known problems, and it is where academic research can greatly help. Therefore, Dr. Du dives into system-level problems, to accommodate the industry. With increased funding and resources, Dr. Du will be able to recruit more researchers to crack the complicated Android operating system, understanding how the system is organized at a broader scale and how it can be enhanced.

Before venturing into mobile technology in 2011, Dr. Du was already a prominent researcher in the field of computer security and has been leading the field for the past 15 years. When computer security studies were still nascent in 2001, there was a shortage in practical educational materials to equip students with; students could learn programming through textbooks but did not have the means to practice it. To respond to this need, Dr. Du started developing hands-on exercises and experiments to teach security concepts....

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AFFILIATION

Syracuse University

EDUCATION

- Ph.D. in Computer Science 2001,Purdue University

AWARDS

- Deans' Award for Excellence in Engineering Education, 2014
- ACM CCS Test-of-Time Award, 2013
- Faculty Excellence Award from College of Engineering and Computer Science, 2013
- Guo Mo-ruo Award, University of Science & Technology of China, 1992
- First-class prize winner in the National High-school Mathematics Contests, 1987 and 1988

RESEARCH AREAS

Technology, Cybersecurity

FUNDING REQUEST

Your contributions will support the continued research of Dr. Kevin Du at Syracuse University as he works to protect smartphone systems from malicious attacks. His current funding allows him to cover 2~3 students, which is not sufficient to maintain a large team and requires him to rely on Teaching Assistantship to support the rest of the students. Additional $150K/year will greatly help his students move the projects forward. Join in with his team to help create a hack-safe cyber community!