

### Interests

Embedded Systems Security, Operating Systems Security, Trustworthy Computing

### Education

- 2014.09– **Ph.D. candidate**, *University of Florida*, Gainesville, Computer & Information Science & Engineering.  
Embedded Systems Security and Trusted Computing
- 2012.09– **Ph.D. student**, *University of Oregon*, Eugene, Computer & Information Science.
- 2014.08 Machine Learning and Systems Security
- 2006.09– **ME**, *Ocean University of China*, Qingdao, Electronic Engineering.
- 2009.06 Digital Signal Processing and Machine Learning
- 2002.09– **BS**, *Qingdao Technological University*, Qingdao, Electronic Information Science.
- 2006.06 Electronic Engineering

### Publications

#### Journals:

- 4 **Towards Automated Firmware Analysis in the IoT Era**; Grant Hernandez, Dave (Jing) Tian, Farhaan Fowze, Tuba Yavuz, Patrick Traynor, Kevin Butler; IEEE Security & Privacy, 2019
- 3 **Characterizing the Security of the SMS Ecosystem with Public Gateways**; Bradly Reaves, Luis Vargas, Nolen Scaife, Dave Tian, Logan Blue, Patrick Traynor, Kevin Butler; ACM Transactions on Privacy and Security (TOPS), 2018
- 2 **Securing ARP/NDP From the Ground Up**; Dave (Jing) Tian, Kevin R. B. Butler, Joseph I. Choi, Patrick D. McDaniel, Padma Krishnaswamy; IEEE Transactions on Information Forensics and Security (TIFS), 2017
- 1 **Taming the Costs of Trustworthy Provenance through Policy Reduction**; Adam Bates, Dave (Jing) Tian, Grant Hernandez, Thomas Moyer, Kevin R. B. Butler, Trent Jaeger; ACM Transactions on Internet Technology (TOIT), 2017

#### Conferences:

- 17 **Examining DES-based Cipher Suite Support within the TLS Ecosystem**; Vanessa Frost, Dave Tian, Christie Ruales, Vijay Prakash, Kevin Butler, Patrick Traynor; ACM ASIA Conference on Computer and Communications Security (ASIACCS'19), 2019; Acceptance Rate = TBD%
- 16 **A Hybrid Approach to Secure Function Evaluation using SGX**; Joseph Choi, Dave Tian, Grant Hernandez, Christopher Patton, Benjamin Mood, Thomas Shrimpton, Kevin Butler, Patrick Traynor; ACM ASIA Conference on Computer and Communications Security (ASIACCS'19), 2019; Acceptance Rate = TBD%
- 15 **A Practical Intel SGX Setting for Linux Containers in the Cloud**; Dave (Jing) Tian, Joseph Choi, Grant Hernandez, Patrick Traynor, Kevin Butler; ACM Conference on Data and Application Security and Privacy (CODASPY'19), 2019; Acceptance Rate = 23.5%
- 14 **LBM: A Security Framework for Peripherals within the Linux Kernel**; Dave (Jing) Tian, Grant Hernandez, Joseph Choi, Vanessa Frost, Peter Johnson, Kevin Butler; IEEE Symposium on Security and Privacy (S&P'19), 2019; Acceptance Rate = TBD%
- 13 **ATtention Spanned: Comprehensive Vulnerability Analysis of AT Commands Within the Android Ecosystem**; Dave (Jing) Tian, Grant Hernandez, Joseph Choi, Vanessa Frost, Christie Ruales, Patrick Traynor, Hayawardh Vijaykumar, Lee Harrison, Amir Rahmati, Mike Grace, Kevin Butler; USENIX Security Symposium, 2018; Acceptance Rate = 19.1%
- 12 **SoK: "Plug & Pray" Today – Understanding USB Insecurity in Versions 1 through C**; Dave (Jing) Tian, Nolen Scaife, Deepak Kumar, Michael Bailey, Adam Bates, Kevin Butler; IEEE Symposium on Security and Privacy (S&P'18), 2018; Acceptance Rate = 11.5%
- 11 **FirmUSB: Vetting USB Device Firmware using Domain Informed Symbolic Execution**; Grant Hernandez, Farhaan Fowze, Dave Tian, Tuba Yavuz, Kevin Butler; ACM Conference on Computer and Communications Security (CCS'17), 2017; Acceptance Rate = 18.1%

- 10 **CPAC: Securing Critical Infrastructure with Cyber-Physical Access Control**; Sriharsha Etigowni, [Dave Tian](#), Grant Hernandez, Kevin Butler, Saman Zonouz; Annual Computer Security Applications Conference (ACSAC'16), 2016; Acceptance Rate = 22.8%
- 9 **ProvUSB: Block-level Provenance-Based Data Protection for USB Storage Devices**; [Dave \(Jing\) Tian](#), Adam Bates, Kevin Butler, Raju Rangaswami; ACM Conference on Computer and Communications Security (CCS'16), 2016; Acceptance Rate = 16.5%
- 8 **Making USB Great Again with USBFILTER**; [Dave \(Jing\) Tian](#), Nolen Scaife, Adam Bates, Kevin Butler, Patrick Traynor; USENIX Security Symposium, 2016; Acceptance Rate = 15.5%
- 7 **Detecting SMS Spam in the Age of Legitimate Bulk Messaging**; Bradley Reaves, Logan Blue, [Dave Tian](#), Patrick Traynor, Kevin Butler; ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec'16), 2016; Acceptance Rate = 35.0%
- 6 **Sending out an SMS: Characterizing the Security of the SMS Ecosystem with Public Gateways**; Bradley Reaves, Nolen Scaife, [Dave Tian](#), Logan Blue, Patrick Traynor, Kevin Butler; IEEE Symposium on Security and Privacy (S&P'16), 2016; Acceptance Rate = 13.3%
- 5 **Defending Against Malicious USB Firmware with GoodUSB**; [Dave \(Jing\) Tian](#), Adam Bates, Kevin Butler; Annual Computer Security Applications Conference (ACSAC'15), 2015; Acceptance Rate = 24.3%
- 4 **Trustworthy Whole-System Provenance for the Linux Kernel**; Adam Bates, [Dave Tian](#), Kevin Butler, Thomas Moyer; USENIX Security Symposium, 2015; Acceptance Rate = 15.7%
- 3 **More Guidelines Than Rules: CSRF Vulnerabilities from Noncompliant OAuth 2.0 Implementations**; Ethan Shernan, Henry Carter, [Dave Tian](#), Patrick Traynor, Kevin Butler; International Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA'15), 2015; Acceptance Rate = 22.7%
- 2 **Securing ARP from the Ground Up**; [Jing \(Dave\) Tian](#), Kevin R.B. Butler, Patrick D. McDaniel, Padma Krishnaswamy; ACM Conference on Data and Application Security and Privacy (CODASPY'15), 2015; Acceptance Rate = 33.3%
- 1 **Securing SSL Certificate Validation through Dynamic Linking**; Adam Bates, Joe Pletcher, Tyler Nichols, Braden Hollembaek, [Jing \(Dave\) Tian](#), Abdulrahman Alkhelaifi, Kevin R. B. Butler; ACM Conference on Computer and Communications Security (CCS'14), 2014; Acceptance Rate = 19.5%

Submitted:

- 3 **BigMAC: Fine-Grained Policy Analysis of Android Firmware**; Grant Hernandez, [Dave Tian](#), Anurag Yadav, Byron Williams, Kevin Butler; IN SUBMISSION, 2019
- 2 **Enclave-based Protocols for Privacy-Preserving Localization**; Joseph Choi, [Dave Tian](#), Tyler Ward, Kevin Butler, Patrick Traynor, John Shea, Tan Wong; IN SUBMISSION, 2019
- 1 **ProXray: Protocol Model Learning and Guided Firmware Analysis**; Farhaan Fowze, [Dave Tian](#), Grant Hernandez, Kevin Butler, Tuba Yavuz; IN SUBMISSION, 2019

## Service

Program Committee	USENIX Security: '19
Conference	IEEE S&P: '16,'17,'18; USENIX Security: '14,'15,'17,'18; ISOC NDSS: '16,'17,'18,'19; ACM CCS: '14,'15,'16;
External Review	USENIX OSDI: '16; ACM AsiaCCS: '15,'17,'18; USENIX Woot: '16; ACSAC: '16; PETS: '15; IEEE MOST: '15; IEEE CNS: '17
Journal Review	Security and Communication Networks (SCN), Journal of Network and Systems Management (JONS)

## Invited Talks

Nov 2018	Defending Operating Systems from Malicious Peripherals, Pennsylvania State University, Host: Patrick McDaniel
Nov 2018	Defending Operating Systems from Malicious Peripherals, University of Illinois Urbana-Champaign, Host: Adam Bates
Feb 2019	Defending Operating Systems from Malicious Peripherals, Drexel University, Host: Dario Salvucci
Feb 2019	Defending Operating Systems from Malicious Peripherals, Duke University, Host: Benjamin Lee
Feb 2019	Defending Operating Systems from Malicious Peripherals, Purdue University, Host: Dongyan Xu
Feb 2019	Defending Operating Systems from Malicious Peripherals, Virginia Tech, Host: Matthew Hicks
Mar 2019	Defending Operating Systems from Malicious Peripherals, University of California Santa Cruz, Host: Owen Arden
Mar 2019	Defending Operating Systems from Malicious Peripherals, University of Texas Dallas, Host: Murat Kantarcioglu
Mar 2019	Defending Operating Systems from Malicious Peripherals, Georgetown University, Host: Clay Shields

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## Awards

- 2019 IEEE Symposium on Security and Privacy Student Travel Grant, IEEE
- 2019 Distinguished Poster Award, The 9th ACM Conference on Data and Application Security and Privacy
- 2018 Second Place Award, SEC Academic Conference (Cybersecurity) Student Poster Presentation
- 2017 Best Poster Award, FICS Annual Research Conference
- 2017 Gartner Group Info Tech Scholarship, University of Florida
- 2016 Best Poster Award, FICS Annual Research Conference
- 2015 ACSAC Student Conferenceship Award, ACSA
- 2015 CISE Travel Grant, University of Florida
- 2015 USENIX Security Student Grant, USENIX
- 2014 Gartner Group Graduate Fellowship, University of Florida
- 2011 Alcatel-Lucent R&D Well Done Award, Alcatel-Lucent
- 2009 Alcatel-Lucent R&D Innovation Award, Alcatel-Lucent
- 2009 Comprehensive Award of Excellent Graduate Scholarship, Ocean University of China
- 2009 Excellent Graduate Student Scholarship, Ocean University of China
- 2006 Full Graduate Scholarship, Ocean University of China
- 2004 Outstanding Student Cadre Scholarship, Qingdao Technological University

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## Work

- 2018.05– **Security Research Engineer Intern**, *Fortanix*, Mountain View, CA, Runtime Encryption.
- 2018.08 Intel SGX research for Containers
- 2017.05– **Security Research Engineer Intern**, *Samsung Research America (SRA)*, Mountain View, CA, KNOX Security.
- 2017.08 Security analysis on USB interfaces for Android phones
- 2008.12– **Software Engineer**, *Nokia R&D (former Lucent Technologies)*, Qingdao, China, Linux Control Platform (LCP).
- 2012.08 System software development on Linux platform
- 2006.03– **POS Tester Intern**, *Hisense R&D*, Qingdao, China, POS Testing.
- 2006.04 POS endurance testing

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## Experience

- 2014.09– **Graduate Research Fellow**, *FICS Research*, Computer & Information Science & Engineering Department, University of Florida, Gainesville, FL.  
Systems Security - Embedded Systems Security and Trusted Computing
- 2016.09– **Lead Graduate Student**, *FICS Research*, Computer & Information Science & Engineering Department, University of Florida, Gainesville, FL.  
2018.09 Systems Security - Embedded Systems Security and Trusted Computing
- 2013.06– **Graduate Research Fellow**, *OSIRIS Lab*, Computer & Information Science Department, University of Oregon, Eugene, OR.  
2014.08 Systems Security - Trusted computing and Embedded Storage
- 2012.09– **Graduate Teaching Fellow**, *AIM Lab*, Computer & Information Science Department, University of Oregon, Eugene, OR.  
2013.05 AI and Machine Learning - Semantic Web and Ontology
- 2009.09– **Graduate Research Fellow**, Electronic Engineering Department, Ocean University of China, Qingdao, China.  
2012.11 DSP and Machine Learning - Support Vector Machine (SVM)
- 2018.09– **Guest Lecturer**, *Computer & Information Science & Engineering Department, University of Florida*, Gainesville, FL.
  - CNT 5410 Computer and Network Security (Fall 2018)
  - CIS 5370 Computer and Information Security (Spring 2019)
- 2012.09– **Graduate Teaching Fellow**, *Computer & Information Science Department, University of Oregon*, Eugene, OR.  
2013.06
  - CIS 122 Intro to Programming & Problem Solving Using Python (Fall 2012, lab)
  - CIS 122 Intro to Programming & Problem Solving Using Python (Winter 2013, lab)
  - CIS 415 Operating Systems (Spring 2013, lab)

2013.12– **Technical Reviewer**, *Packt Publishing*, Birmingham, UK.

- Present
- Mastering Python Regular Expressions
  - Python 3 Text Processing with NLTK 3 Cookbook
  - Building Probabilistic Graphical Models with Python
  - Mastering Probabilistic Graphical Models with Python
  - Embedded Linux Projects Using Yocto Project Cookbook
  - Yocto for Raspberry Pi
  - LLVM Cookbook

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## Certifications

- 2011 AIX certification (AN10, AN12), IBM
- 2010 Project Management, ChoiZe Management Consulting
- 2010 Linux Debugging and Performance, JOHN BRYCE
- 2008 Sun Certified Java Programmer (SCJP), Sun Microsystems
- 2008 Solaris OS Architecture, Sun ERI & OpenTech
- 2008 Solaris 10 Admin Training, Sun Developer Network (China) & Unix-Center
- 2007 Sun Studio Hands-on Training with Unix/Linux Commands, Sun Developer Network (China) & Unix-Center
- 2004 National Computer Rank Examination (NCRE), Rank 2, C programming, China Education Ministry
- 1998 Microcomputer Operation Certification for Adult (DOS, Foxbase), Pute Computer Training Center of Qingdao Technological University

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## Links

- My web <https://davejingtian.org>
- My code <https://github.com/daveti>
- FICS Res. <https://fics.institute.ufl.edu/>