

DANFENG (DAPHNE) YAO
ASSISTANT PROFESSOR OF COMPUTER SCIENCE
VIRGINIA TECH
CURRICULUM VITAE

PERSONAL

Gender: Female.

Marital Status: Married.

Birth Year: 1976.
Child: One daughter.

RESEARCH INTERESTS

User-centric security and privacy, social- and human-behavior pattern recognition, malware detection, insider threats, data leak prevention, cryptography, human behaviors in cyberspace, and computer science education.

EDUCATION

Ph.D., Computer Science, Brown University , Providence, RI	2007
M.S., Computer Science, Indiana University , Bloomington, IN	2002
M.A., Chemistry, Princeton University , Princeton, NJ	2000
B.S., Chemistry, Peking University , Beijing, China	1998

EMPLOYMENT

Department of Computer Science, Virginia Tech, Blacksburg VA Assistant Professor	Dec. 2009 – Present
Department of Computer Science, Rutgers University, New Brunswick, NJ Assistant Professor	Jan. 2008 – Dec. 2009
Department of Computer Science, Brown University Research assistant (With Roberto Tamassia, Plastech Professor of Computer Science and Department Chair)	Aug. 2002 – Dec. 2007
CERIAS, Purdue University, West Lafayette IN Visiting scholar (With Professor Elisa Bertino and Mikhail J. Atallah)	Sep. 2006 – Dec. 2007
HP Systems Security Lab, Princeton, NJ Research intern (With Dr. Stuart Haber)	May 2006 – Aug. 2006
IAM Technology Inc., Providence, RI Consultant (With David Croston, CEO)	Apr. 2005 – May. 2007
Center of Genomics and Bioinformatics, Indiana University, Bloomington Research assistant (With Dr. Donald Gilbert)	May 2001 - Aug. 2002

HONORS

Best Paper Award, the 6th CollaborateCom Conference	Oct. 2010
CAREER Award, National Science Foundation	Jan. 2010
Best Poster Prize, Wireless & Optical Communications Conference	May 2009
Nomination for Microsoft New Faculty Fellowship (one per university)	Nov. 2008
Best Student Paper Award, ICICS 2006	Dec. 2006
Award for Technological Innovation from Brown University	Apr. 2006
University Fellowship, Brown University	Sep. 2002
Graduate with the Highest Honors, Peking University	Jul. 1998
IEC Fellowship, Peking University	Sep. 1996
Outstanding Student Fellowship, Peking University	Sep. 1995
SONY Fellowship, Peking University	Sep. 1995

PATENT

1. Danfeng Yao, Xiaokui Shu, and Kui Xu. Privacy-Preserving Data Leak Prevention. Provisional Patent filed. Mar. 2011.
2. Deian Stefan, Chehai Wu, and Danfeng Yao. Robust Keystroke Authentication and Input-Traffic Correlation Analysis For Accurate Bot Detection. Patent Cooperation Treaty Filed. Rutgers University. Mar., 2010.
3. Stuart Haber, William Horne, Tomas Sander, and Danfeng Yao. Integrity Verification of Pseudonymized Documents. HP Labs. Sep. 2007. U. S. Patent Filed. Application number: 11/854413.

SELECT MEDIA REPORT

1. International Business Times, Homeland Security News Wires, PHYSORG (United Kingdom) on our award-winning keystroke dynamic security work. Nov. 2010.
<http://www.ibtimes.com/articles/77893/20101102/tech-malware-hacking-virginia-tech-hackers-computer-security.htm>
<http://www.homelandsecuritynewswire.com/keystroke-biometric-solution-will-protect-against-hacking>
<http://www.physorg.com/news/2010-11-virginia-tech-scientist-student-award.html>
2. NSF news and ACM Technews on our activity-based authentication. Nov. 2009.
http://www.nsf.gov/news/news_summ.jsp?cntn_id=115923&org=NSF&from=news
<http://technews.acm.org/archives.cfm?fo=2009-11-nov/nov-11-2009.html#437118>

TEACHING

Computer Science Department

Virginia Tech

CS5984 Theory and Practice of Web Security and Privacy.

Spring 2011

This course is being redesigned as a core course in a future security Master program jointly developed by CS and ECE Departments at VT.

CS4984 Introduction to Computer Security.

Fall 2010, 2011

I created CS4580, which will be a new introduction-level undergraduate computer security course starting 2012. CS4580 will be the core required course in the undergraduate security minor program jointly developed by CS and ECE Departments at VT.

CS6204 Advanced Computer Security and Privacy

Spring 2010

Computer Science Department

Rutgers University

CS673 Recent Advances in Computer Security

Fall 2009

CS672 Information Security

Fall 2008

CS352 Internet Technology

Spring 2008, Spring 2009

CS500:04 Light Seminar: Secure Information Sharing

Spring 2008

GRANTS FUNDED

1. User-Centric Dependency Analysis in Programs for Identifying Malware. \$20,000. Security and Software Engineering Research Center (S2ERC). PI: Danfeng Yao. Jan. 2012 - May. 2012.

2. Novel Games for Analyzing Cyber-Security Behaviors: An Interdisciplinary Approach. \$60,000. Virginia Tech, ICTAS. PI: Danfeng Yao. Co-PI: Scott Geller (VT Psychology) and Manuel Perez-Quinones (VT CS). Jul. 2011 - Jun. 2012.
3. Developing Secure Face Recognition Systems. \$20,000. PI: Danfeng Yao. Northrop Grumman. Sep. 2011 - Aug. 2012.
4. Exploring Personalized Security With Novel Learning Techniques for Host-Based Anomaly Detection. Army Research Office (ARO). PI: Danfeng Yao. \$50,000. May 2011 - April 2012.
5. CAREER: Human-Behavior Driven Malware Detection. National Science Foundation (NSF). PI: Danfeng Yao. \$530,000. Feb. 2010 - Jan. 2015.
6. CT - ISG: ROME: Robust Measurement in Sensor Networks. National Science Foundation (NSF). PI: Yanyong Zhang, Co-PI: Danfeng Yao and Hui Xiong. \$400,000. Sep. 2008 - Aug. 2011.
7. Secure and Flexible Information Sharing for Crisis Communication in Pervasive Computing Environments. Rutgers University Pervasive Computing Seed Grant. PI: Danfeng Yao. Co-PI: James Garnett. \$50,000. Mar. 2008 - Jun. 2009.
8. Center of Excellence for Command, Control and Interoperability. Department of Homeland Security (DHS). PI: Fred Roberts. Danfeng Yao is among the Rutgers researchers. \$15 million. 2009 - 2015.
9. The Rutgers University Research Initiative on Cybersecurity Economics (RICE). Rutgers University Academic Excellence Fund. PI: Rebecca Wright. Co-PIs: Vijay Atluri, Richard McLean, and Danfeng Yao. \$60,000. Jun. 2009 - May 2010.

GRANTS PENDING

1. REU Supplemental Fund. \$16,000. National Science Foundation (NSF). PI: Danfeng Yao. Pending.
2. Privacy-Preserving Data-Leak Prevention. \$35,000. Security and Software Engineering Research Center (S2ERC). PI: Danfeng Yao. Pending.
3. Anomaly Detection Through Quantified Dependence Analysis. \$105,389. PI: Danfeng Yao. Co-PI: Barbara Ryder. Defense Advanced Research Projects Agency (DARPA). Pending.
4. Real-Time Anomaly Detection and Quantitative Assurance for Securing Systems. Office of Naval Research (ONR), Young Investigator Program (YIP). PI: Danfeng Yao. \$510,000. Pending.

JOURNALS AND BOOK CHAPTERS

1. Kui Xu, Huijun Xiong, Chehai Wu, Deian Stefan, and Danfeng Yao. Data-Provenance Verification For Secure Hosts. *IEEE Transactions of Dependable and Secure Computing (TDSC)*. To appear. Jan. 2012.
2. Deian Stefan, Xiaokui Shu, and Danfeng Yao. Robustness of Keystroke-Dynamics Based Biometrics Against Synthetic Forgeries. *Computers & Security*. To appear.
3. Qian Yang, Danfeng Yao, Kaitlyn Muller, and James Garnett. Using a Trust Inference Model for Flexible and Controlled Information Sharing During Crises. *Journal of Contingencies and Crisis Management*. 18(4), 231-241. Dec. 2010. Wiley-Blackwell.
4. Jerry Rick Ramstetter, Yaling Yang, and Danfeng Yao. Applications and Security of Next-Generation User-Centric Wireless Systems. *Future Internet, Special Issue on Security for Next Generation Wireless and Decentralized Systems*. Editors: Ralf Steinmetz and André Koenig. **Invited paper**. Jun. 2010.

5. Roberto Tamassia, Danfeng Yao, and William H. Winsborough. Independently-Verifiable Decentralized Role-Based Delegation. *IEEE Transactions on Systems, Man, and Cybernetics, Part A*. 40(6), 1206-1219. Nov. 2010.
6. Danfeng Yao and Roberto Tamassia. Compact and Anonymous Role-Based Authorization Chain. *ACM Transactions on Information and System Security (TISSEC)*. 12(3). 1-27. 2009.
7. Lei Zhang, Chih-Cheng Chang, and Danfeng Yao. Applied Cryptography in Infrastructure-Free Wireless Networks. In *Applied Cryptography for Cyber Security and Defense: Information Encryption and Cyphering*. Editors: Li Yang and Hamid R. Nemati. IGI Global Press. Pages 168-179. Aug. 2010.
8. Danfeng Yao, Nelly Fazio, Yevgeniy Dodis, and Anna Lysyanskaya. Forward-Secure Hierarchical IBE with Applications to Broadcast Encryption Schemes. In *Cryptology and Information Security Series on Identity-Based Cryptography*. Editors: Marc Joye and Gregory Neven. IOS Press. Oct. 2008.
9. Michael T. Goodrich, Roberto Tamassia, and Danfeng Yao. Notarized Federated Identity Management for Increased Trust in Web Services. *Journal of Computer Security*, 16(4): 399-418. 2008.
10. Danfeng Yao, Keith Frikken, Mike Atallah, Roberto Tamassia. Private Information: To Reveal or Not To Reveal. *ACM Transactions on Information and System Security (TISSEC)*. 12(1). 1-27. Feb. 2008.
11. Yunhua Koglin, Danfeng Yao, and Elisa Bertino. Secure Content Distribution by Parallel Processing from Cooperative Intermediaries. *IEEE Transactions on Parallel and Distributed Systems*. 19(5): 615-626. 2008.

PEER-REVIEWED CONFERENCES/WORKSHOPS

12. Hussain Almohri, Danfeng Yao, and Dennis Kafura. Identifying Native Applications With High Assurance. In *Proceedings of the Second ACM Conference on Data and Application Security and Privacy (CODASPY)*. San Antonio, TX. Feb. 2012. (Acceptance rate: 25%).
13. Huijun Xiong, Xinwen Zhang, Wei Zhu, and Danfeng Yao. Towards End-to-End Secure Content Storage and Delivery with Public Cloud. In *Proceedings of the Second ACM Conference on Data and Application Security and Privacy (CODASPY)*. San Antonio, TX. Feb. 2012. (Acceptance rate: 25%).
14. Detecting Infection Onset With Behavior-Based Policies. Kui Xu, Danfeng Yao, Qiang Ma, and Alex Crowell. In *Proceedings of the International Conference on Network and System Security (NSS)*. London, UK. Sep. 2011 (Acceptance rate: 22%).
15. Saman Zarandioon, Danfeng Yao, and Vinod Ganapathy. K2C: Cryptographic Cloud Storage With Lazy Revocation and Anonymous Access. In *Proceedings of the 7th International ICST Conference on Security and Privacy in Communication Networks (SecureComm)*. Lecture Notes in Computer Science (LNCS). Sep. 2011. London, UK. (Acceptance rate: 24%).
16. Huijun Xiong, Xinwen Zhang, Wei Zhu and Danfeng Yao. CloudSeal: End-to-End Content Protection in Cloud-based Storage and Delivery Services. In *Proceedings of the 7th International ICST Conference on Security and Privacy in Communication Networks (SecureComm)*. Lecture Notes in Computer Science (LNCS). Sep. 2011. London, UK.
17. Patrick Butler, Kui Xu, and Danfeng Yao. Quantitatively Analyzing Stealthy Communication Channels. In *Proceedings of International Conference on Applied Cryptography and Network Security (ACNS)*. Lecture Notes in Computer Science. Jun. 2011. Nerja, Spain. Acceptance rate: 18%

18. Yipeng Wang, Zhibin Zhang, Danfeng Yao, Buyun Qu, and Li Guo. Inferring Protocol-State Machine from Network Traces: A Probabilistic Description Method. In *Proceedings of International Conference on Applied Cryptography and Network Security (ACNS)*. Lecture Notes in Computer Science. Jun. 2011. Acceptance rate: 18%
19. Deian Stefan and Danfeng Yao. Keystroke-Dynamics Authentication Against Synthetic Forgeries. In *Proceedings of the International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom)*. Chicago, IL. Nov. 2010. **Best Paper Award**.
20. Deian Stefan, Chehai Wu, Danfeng Yao, and Gang Xu. Knowing Where Your Input is From: Kernel-Level Data-Provenance Verification. In *Proceedings of the 8th International Conference on Applied Cryptography and Network Security (ACNS)*. Pages 71-87. Beijing China. Jun., 2010.
21. Chih-Cheng Chang, Brian Thompson, Hui Wang, Danfeng Yao. Towards Publishing Recommendation Data With Predictive Anonymization. In *Proceedings of ACM Symposium on Information, Computer & Communication Security (ASIACCS)*. 24-35. Apr. 2010. Beijing, China.
22. Huijun Xiong, Prateek Malhotra, Deian Stefan, Chehai Wu, and Danfeng Yao. User-Assisted Host-Based Detection of Outbound Malware Traffic. In *Proceedings of International Conference on Information and Communications Security (ICICS '09)*. Pages 293-307. Beijing, P.R. China. Dec. 2009. Lecture Notes in Computer Science 5927. Springer. (Acceptance rate 19%).
23. Nitya H. Vyas, Anna Squicciarini, Chih-Cheng Chang, and Danfeng Yao. Towards Automatic Privacy Management in Web 2.0 with Semantic Analysis on Annotations. In *Proceedings of International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom)*. Washington DC. Nov. 2009.
24. Anitra Babic, Huijun Xiong, Danfeng Yao, and Liviu Iftode. Building Robust Authentication Systems With Activity-Based Personal Questions. In *Proceedings of ACM Workshop on Assurable & Usable Security Configuration (SafeConfig)*. Collocated with the ACM Conference on Computer and Communications Security. Chicago, IL. Nov. 2009.
25. Saman Zarandioon, Danfeng Yao, and Vinod Ganapathy. Privacy-aware Identity Management for Client-side Mashup Applications. In *Proceedings of the Fifth ACM Workshop on Digital Identity Management (DIM)*. Collocated with the ACM Conference on Computer and Communications Security. Chicago, IL. Nov. 2009. Pages 21-30.
26. Brian Thompson, Danfeng Yao, Stuart Haber, William G. Horne, and Tomas Sander. Privacy-Preserving Computation and Verification of Aggregate Queries on Outsourced Databases. In *Proceedings of the 9th Privacy Enhancing Technologies Symposium (PETS)*. Seattle, WA. Aug. 2009. Lecture Notes in Computer Science 5672. Pages 185-201.
27. Tzvika Chumash and Danfeng Yao. Detection and Prevention of Insider Threats in Database Driven Web Services In *Proceedings of The Third IFIP WG 11.11 International Conference on Trust Management (IFIPTM)*. Pages 117-132. Jun. 2009. West Lafayette, IN.
28. Brian Thompson and Danfeng Yao. Union-Split Clustering Algorithm and Social Network Anonymization. In *Proceedings of ACM Symposium on Information, Computer & Communication Security (ASIACCS)*. Pages 218-227. Mar. 2009. Sydney, Australia.
29. Tuan Phan and Danfeng Yao. *SelectAudit*: A Secure and Efficient Audit Framework for Networked Virtual Environments. In *Proceedings of the International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom)*, **Invited paper**. Nov., 2008. Orlando, FL.
30. Saman Zarandioon, Danfeng Yao, and Vinod Ganapathy. Design and Implementation of an Open Framework for Secure Communication in Mashup Applications. In *Proceedings of Annual Computer Security Applications Conference (ACSAC)*. Dec. 8-12, 2008, Anaheim, CA. Pages 355-364.

31. Vivek Pathak, Danfeng Yao, and Liviu Iftode. Securing Location Aware Services Over VANET Using Geographical Secure Path Routing. In *Proceedings of International Conference on Vehicular Electronics and Safety (ICVES)*. September 22-24, 2008. Columbus, Ohio. Pages 1-8.
32. Vivek Pathak, Danfeng Yao, and Liviu Iftode. Improving Email Trustworthiness through Social-Group Key Authentication. *Proceedings of the Fifth Conference on Email and Anti-Spam (CEAS)*. Microsoft Research Silicon Valley, Mountain View, California. Aug 21-22, 2008. Pages 1-12.
33. Stuart Haber, Yasuo Hatano, Yoshinori Honda, William Horne, Kunihiko Miyazaki, Tomas Sander, Satoru Tezuka, and Danfeng Yao. Efficient signature schemes supporting redaction, pseudonymization, and data deidentification. In *Proceedings of ACM Symposium on Information, Computer & Communication Security (ASIACCS)*. Pages 353-362. Mar. 2008.
34. Danfeng Yao, Roberto Tamassia, and Seth Proctor. Private Distributed Scalar Product Protocol With Application To Privacy-Preserving Computation of Trust. In *Proceedings of IFIPTM 2007 – Joint iTrust and PST Conferences on Privacy, Trust Management and Security*. Moncton, New Brunswick, Canada. Jul. 2007.
35. Isabel F. Cruz, Roberto Tamassia, and Danfeng Yao. Privacy-Preserving Schema Matching Using Mutual Information. In *Proceedings of the 21th Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec '07)*. 93-94. Redondo Beach, CA. Jul. 2007.
36. Danfeng Yao, Yunhua Koglin, Elisa Bertino, and Roberto Tamassia. Decentralized Authorization and Data Security in Web Content Delivery. In *Proceedings of the 22nd ACM Symposium on Applied Computing (SAC '07)*, Special Track on Web Technologies. 1654-1661. ACM Press. Seoul, Korea. Mar. 2007.
37. Danfeng Yao, Keith B. Frikken, Mikhail J. Atallah, and Roberto Tamassia. Point-Based Trust: Define How Much Privacy Is Worth. In *Proceedings of the Eighth International Conference on Information and Communications Security (ICICS '06)*. LNCS 4307, pages 190-209. Springer. Raleigh, NC. Dec. 2006. **Best Student Paper Award**.
38. Danfeng Yao and Roberto Tamassia. Cascaded Authorization with Anonymous-Signer Aggregate Signatures. In *Proceedings of the Seventh Annual IEEE Systems, Man and Cybernetics Information Assurance Workshop (IAW '06)*. West Point, NY. Jun. 2006.
39. Michael T. Goodrich, Roberto Tamassia, and Danfeng Yao. Notarized Federated Identity Management for Increased Trust in Web Services. In *Proceedings of the 20th Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec '06)*. LNCS 4127, pages 133-147. Springer. Sophia Antipolis, France. Jul. 2006.
40. Danfeng Yao, Michael Shin, Roberto Tamassia, and William H. Winsborough. Visualization of Automated Trust Negotiation. In *Proceedings of the Workshop on Visualization for Computer Security (VizSEC '05) in Conjunction with Vis 2005 and InfoVis 2005*. Pages 65-74. IEEE Press. Minneapolis, MN. Oct. 2005.
41. Danfeng Yao, Roberto Tamassia, and Seth Proctor. On Improving the Performance of Role-Based Cascaded Delegation in Ubiquitous Computing. In *Proceedings of the IEEE/CreateNet Conference on Security and Privacy for Emerging Areas in Communication Networks (SecureComm '05)*. Pages 157-168. IEEE Press. Athens, Greece. Sep. 2005.
42. Michael T. Goodrich, Roberto Tamassia, and Danfeng Yao. Accredited DomainKeys: A Service Architecture for Improved Email Validation. In *Proceedings of the Second Conference on Email and Anti-Spam (CEAS '05)*. Stanford University, CA. Jul. 2005.
43. Danfeng Yao, Nelly Fazio, Yevgeniy Dodis, and Anna Lysyanskaya. ID-Based Encryption for Complex Hierarchies with Applications to Forward Security and Broadcast Encryption. In *Proceedings of the 11th ACM Conference on Computer and Communications Security (CCS '04)*. Pages 354-363. ACM Press. Washington, DC, Oct. 2004.

44. Roberto Tamassia, Danfeng Yao, and William H. Winsborough. Role-Based Cascaded Delegation. In *Proceedings of the ACM Symposium on Access Control Models and Technologies (SACMAT '04)*. Pages 146-155. ACM Press. Yorktown Heights, NY, Jun. 2004.

MANUSCRIPTS UNDER REVIEW

45. Salil P Banerjee, Damon L Woodard, and Danfeng Yao. Soft Biometric Classification Using Keystroke Dynamics : A Preliminary Study. *Pattern Recognition Letters*. Jun. 2011. *Submitted*.
46. Kui Xu, Patrick Butler, Sudip Saha, and Danfeng (Daphne) Yao. On The Feasibility of Abusing DNS For Massive-Scale Stealthy Communications. *IEEE Transactions of Dependable and Secure Computing (TDSC)*. *Submitted*.
47. User Intention-Based Traffic Dependence Analysis For Anomaly Detection. Hao Zhang, Danfeng Yao, William Matt Banick, and Naren Ramakrishnan. *ACM Symposium on Information, Computer & Communication Security (ASIACCS)*. *Submitted*.
48. Privacy-Aware Data-Leak Detection. Xiaokui Shu and Danfeng Yao. *ACM Symposium on Information, Computer & Communication Security (ASIACCS)*. *Submitted*.
49. Provable Forward Security in Attribute-Based Encryption. Zilong Wang, Danfeng Yao, and Rongquan Feng. *ACM Transactions on Information and System Security (TISSEC)*. *Submitted*.
50. User-Behavior Based Detection of Infection Onset. Kui Xu, Danfeng Yao, Qiang Ma, and Alex Crowell. *Computers & Security*. *Submitted*.

NON-PEER-PREVIEWED PUBLICATIONS

1. Kui Xu, Qiang Ma, and Danfeng Yao. Detecting the Onset of Infection for Secure Hosts. In *Proceedings of the 13th International Symposium On Recent Advances in Intrusion Detection (RAID)*. *Extended abstract*. Ottawa, Ontario, Canada. Sep. 2010.
2. Personal Anomaly Detection and Smart-Phone Security. Huijun Xiong, Danfeng Yao, Lu Han, and Liviu Iftode. In *Proceedings of Virginia Tech Annual Symposium on Wireless Communication*. 6 pages. June 2010. Blacksburg VA.
3. Huijun Xiong and Danfeng Yao. Characterization of Individual Usage Patterns in Organizational Wireless Networks - A Case Study. In *Proceedings of The Eighteenth Wireless and Optical Communications Conference (WOCC)*. May, 2009, Newark, NJ.
4. Danfeng Yao. An Ad Hoc Trust Inference Model for Flexible and Controlled Information Sharing. In *Proceedings of International Conference on Security and Management (SAM)*. Pages 555-561. Las Vegas, NV. July, 2008.
5. Stuart Haber, William G. Horne, Tomas Sander, and Danfeng Yao. Privacy-preserving verification of aggregate queries on outsourced database. *Research Disclosure*. 528: 349-351. Kenneth Mason Publications.

PRESENTATIONS

1. User-Centric Dependence Analysis in Programs For Identifying Malware. Security Software and Engineering Research Center Showcase. Ames, IA. Nov. 2011.
2. Fuzzy Fingerprinting For Privacy-Aware Data-Loss Prevention. Huawei America Research Center. Santa Clara, CA. Jul. 2011.

3. Novel Scalable Data-Loss Prevention Techniques. RackSpace. Blacksburg VA. Mar. 2011.
4. User-Centric Security and Privacy. Virginia Tech College of Engineering Advisory Board Meeting. Oct. 2010.
5. Host-Based Anomaly Detection Based on User Activities. Georgia Tech Information Security Center (GTISC), UNC Chapel-Hill Department of Computer Science, Virginia Tech Department of Electric and Computer Engineering CESCO. Apr. 2010.
6. Host-Based And User-Centric Approaches For Detecting Drive-By-Download Attacks. Computer Science Departmental Seminar. New Jersey Institute of Technology. Nov. 2009.
7. Host-Based and User-Centric Detection of Drive-By-Download Attacks. DIMACS Fall Mixer. Rutgers University. Sep. 2009.
8. Cryptographic Provenance Verification Approach in Malware Detection With Trusted User Inputs. *Security and Privacy Day*. Rutgers University. May 2009.
9. Personalized Security With Trusted User Inputs For Botnet Detection. *Virginia Tech Computer Science Departmental Seminar*, Blacksburg, VA. May 2009.
10. Keystroke Dynamic Authentication With Trusted User Inputs For Human-Behavior Driven Bot Detection. *Purdue University Computer Science Departmental Seminar*, West Lafayette, IN. Mar. 2009.
11. Keystroke Authentication and Human-Behavior Driven Bot Detection. DyDAn Student-organized Seminar Series, Rutgers University. Nov. 2008.
12. Keystroke Dynamics Authentication and Human-Behavior Driven Bot Detection. *Departmental Seminar*. Stevens Institute of Technology, Department of Electrical and Computer Engineering. Hoboken, NJ. Oct. 2008.
13. Compact and Anonymous Role-Based Authorization Chains. *NIST Workshop on Applications of Pairing Based Cryptography: Identity Based Encryption and Beyond*. NIST at Gaithersburg, MD. Jun. 2008.
14. Efficient signature schemes supporting redaction, pseudonymization, and data deidentification. *BSF/DIMACS/DyDAn Workshop on Data Privacy*. Rutgers University, NJ. Jan. 2008.
15. Private Information: To Reveal Or Not To Reveal. *Departmental Seminars*. Department of Computer Science at Rutgers University, Texas A&M University, Washington University at St. Louis, and Indiana University - Purdue University at Indianapolis; Department of Electrical and Computer Engineering at Iowa State University and Purdue University. Spring 2007.
16. Trust and Service Negotiations Using WSPL. Sun Microsystems Lab, Burlington MA. Nov. 2003.

POSTERS/DEMOS

1. Privacy-Preserving Data-Leak Prevention. Xiaokui Shu and Danfeng Yao. Security and Software Engineering Research Center (S2ERC) Showcase. Ames, IA. Nov. 2011.
2. User-Centric Dependency Analysis in Programs for Identifying Malware. Karim Elish, Yiwei Shi, Danfeng Yao, and Barbara Ryder. Security and Software Engineering Research Center (S2ERC) Showcase. Ames, IA. Nov. 2011.
3. Cyber Game for Behavior and Privacy Studies. Casey Link, Kui Xu, and Danfeng Yao. Virginia Tech Undergraduate Research on Computer Science (VTURCS). Apr. 2011. **Best Poster Award**.
4. Overview Of Yao Group Research on Cyber Security (posters and demos). *Virginia Tech Computer Science 40-th Anniversary*. Nov. 2010.

5. Know What Your Application Does: Detecting User-Level Malware. Matt Banick, Danfeng Yao. *Virginia Tech Undergraduate Research in Computer Science (VTURCS)*. Apr. 2010. Blacksburg, VA.
6. Ensuring Host Integrity With Cryptographic Provenance Verification. Deian Stefan, Chehai Wu, Danfeng Yao, and Gang Xu. *ACM Computer and Communications Security (CCS)*. Chicago, IL. Nov. 2009.
7. Huijun Xiong, Chih-Cheng Chang, Prateek Malhotra, and Danfeng Yao. Exploring the Human-Behavior Driven Detection Approach in Identifying Outbound Malware Traffic. *USENIX Security Symposium*. Montreal, Canada. Aug. 2009.
8. Brian Thompson, Chih-Cheng Chang, Hui Wang, and Danfeng Yao. Privacy-Aware Publishing of Netflix Data. *IEEE Symposium on Security and Privacy*. Oakland, CA. May 2009.
9. Chehai Wu and Danfeng Yao. CompareView - A Provenance Verification Framework for Detecting Rootkit-Based Malware. *IEEE Symposium on Security and Privacy*. Oakland, CA. May 2009.
10. Jiawei Sun, Bernhard Firner, Danfeng Yao, and Yanyong Zhang. Efficient and Fault-Tolerant Detection of Attacks in RFID Asset Tracking Systems. *Wireless and Optical Communications Conference (WOCC)*. Newark, NJ. May 2009.
11. Deian Stefan, Danfeng Yao, and Gang Xu. Trusted-input for anomaly detection of botnets. *The Third Annual DHS University Network Summit*. Washington, D.C. Mar. 2009.
12. Qian Yang and Danfeng Yao. EmAuth: a Framework for Cross-Organizational Vouching. *The Eighth New Jersey Universities Homeland Security Research Consortium Symposium*. Princeton University, NJ. Dec. 2008.
13. Huijun Xiong and Danfeng Yao. Human-Behavior Driven Personalized Anomaly Detection. *Security and Privacy Day*. IBM Research, NY. Dec. 2008.
14. Brian Thompson and Danfeng Yao. Social Role-Preserving Graph Anonymization Using Clustering. *Security and Privacy Day*. IBM Research, NY. Dec. 2008.
15. Nitya H. Vyas and Danfeng Yao. Folksonomy Meets Text Inference: Automatic Privacy Management For Web 2.0. *Security and Privacy Day*. IBM Research, NY. Dec. 2008.
16. Tuan Phan and Danfeng Yao. Secure and Efficient Audit Framework for Multi-Player Online Games. *Security and Privacy Day*. SUNY, Stony Brook. May 2008.

STUDENTS

Huijun Xiong (Ph.D. student, joined Rutgers in Fall '08)

Kui Xu (Ph.D. student, joined Rutgers in Fall '09)

Xiaokui Shu (Ph.D. student, joined VT in Fall '10)

Hao Zhang (Ph.D. student, joined VT in Summer '10)

Hussain Almohri (Ph.D. student, joined VT in Spring '07)

Karim Elish (Ph.D. student, joined VT in Fall '09)

Saman Zarandioon (Ph.D. student at Rutgers University)

Yipan Deng (M.S., graduated, May '11)

Vivek Pathak (Rutgers Ph.D. graduated '09, on faculty at Stevens Institute of Technology Computer Science Department, co-advised with Prof. Liviu Iftode)

Chehai Wu (Rutgers M.S. graduated, Oct., 2009, first job at AppFolio.com)

Nitya H. Vyas (Rutgers M.S. graduated, May '10, first job at VMTurbo)

Zhimin Chen (Ph.D. thesis committee, '10. Virginia Tech Ph.D. Electrical and Computer Engineering Department)

Noha Elsherbini (VT-Mena, Computer Science Department at Arab Academy for Science, Technology, and Maritime Transport)

Deian Stefan (M.S. student at The Cooper Union, NYC, REU '08)
 Alexander Crowell (Undergraduate at Rutgers University, REU '09, Class '10)
 Prateek Malhotra (Undergraduate at Rutgers University, Class '12)
 Anitra Babic (Undergraduate at Chestnut Hill College, REU '09)
 Andre Madeira (Ph.D. thesis committee '09)
 Lee W. Lerner (Ph.D. thesis committee member, VT ECE Department)
 Brendan Avent (undergrad research, VT CS, Fall '11, Spring '12)
 Scott Luxenberg (undergrad research, VT CS, Spring '11)
 Daniel Breakiron (undergrad research, VT CS, Fall '10)
 William Matt Banick (undergrad research, VT CS/Psychology, Spring, Fall '10)
 Casey Link (undergrad research, VT CS, Spring '11)
 Gouri Dongaonkar (Undergraduate, Rutgers Department of Electrical and Computer Engineering)

STUDENT AWARDS AND HONORS

Kui Xu, VT Graduate School Travel Award,	Dec. 2011
Casey Link, VTURCS Best Poster Award,	Apr. 2011
Tingting Jiang, NSF Research Graduate Fellowship,	Apr. 2011
Tingting Jiang, Microsoft Research Graduate Womens Scholarship,	Jan. 2011
Kui Xu, IEEE Security & Privacy Symposium Travel Award,	Apr. 2010
Chih-Cheng Chang, ASIACCS Travel Award,	Feb. 2010
Saman Zarandioon, Huijun Xiong, ACM CCS Student Travel Grant,	Oct. 2009
Chih-Cheng Chang, USENIX Security Symposium Student Travel Award,	Aug. 2009
Brian Thompson, Chehai Wu, IEEE Symposium on Security and Privacy Travel Awards,	May 2009
Brian Thompson, DHS DyDAn Fellowship,	Jan. 2009 - Aug. 2011
Deian Stefan, Botnet Biometrics Work Featured in NSF Highlights,	Jan. 2009
Saman Zarandioon, ACSAC Student Conferenceship,	Dec. 2008
Vivek Pathak, Rutgers University Graduate School Travel Award,	Nov. 2008

SERVICES

Core person in CS/ECE joint cyber security curriculum development	2011-2012
Qualification Exam Committee, Virginia Tech Computer Science	2011-2013
Faculty Search Committee, Virginia Tech Computer Science	2010-2011, 2011-2012
Faculty Search Committee, Virginia Tech Electrical and Computer Engineering	2011-2012
Publicity and Awards Committee, Rutgers Computer Science	2008-2009
Admission Committee, Rutgers Computer Science	2008-2009

OUTREACH, DIVERSITY, & INTERNATIONAL ACTIVITIES

Instructor for C-Tech ² High School Girls Summer School	2011
Presented at Women's Preview Weekend of College of Engineering	Mar. 2010, Apr. 2011
Demo at the COE recruiting events for underrepresented high school sophermores	Apr. 2011
Presented in the Meet the Faculty event of Computer Science Dept.	Jan. 2010, Jan. 2011
Signed up as a mentor in Scieneering mentoring program	Mar. 2011
Meet with minority Ph.D. students from Georgia Tech	Jan. 2011
Demos and posters at VT CS 40th anniversary weekend	Nov. 2010
DIMACS Career Planning Seminar for graduate students and postdocs	Oct. 2008
Faculty host for Chinese delegation visit led by Jiaquang Sun, the vice director of the National Natural Science Foundation of China	Jul. 2008

PROFESSIONAL ACTIVITIES

1. Editorial board member for *International Journal of Security and Networks (IJSN)*.

2. Reviewer for *Wireless Networks, Mobile Networks and Applications, Data & Knowledge Engineering Journal, Journal of Information Processing, ACM Transactions on Information and System Security (TISSEC), Journal of Computer Security, IEEE Transactions on Dependable and Secure Computing (TDSC), Knowledge and Information Systems, IEEE Transactions on Knowledge and Data Engineering, IEEE Journal on Selected Areas in Communications, Frontiers of Computer Science in China, Journal of Systems and Software, IEEE Internet Computing, Usenix Technical '08, IEEE Symposium on S & P '07, ICDE '07, IEEE Intelligent Transportation Systems Society Conference Management System 2010, Workshop on Embedded System Security '10.*

Program Committee member for *ISPEC '12, ASIACCS '12, ACNS '12, SecureComm '11, WPES '11, CSA '11, IPDPS '11, MobilPST '11, IEEE CANS '10, GLOBECOM '11, '10, IFIPTM '11, '10, '09, WWW '10, '09, IEEE ICCCN '10, '09, Create-Net/ICST CollaborateCom '11, '10, '09, '08, ACM SAC '07, IEEE PADM '07.*

3. NSF panelist '08.
4. Co-organizer of Northeast Security and Privacy Day at Rutgers University, May 2009.
5. Served as a panel on the VT CS Graduate Council Academic Job Search Panel, Oct. 2011.
6. ACM member, IEEE member. Member in Center for Discrete Mathematics & Theoretical Computer Science (DIMACS), DHS Center of Excellence in Command, Control and Interoperability (CCI).

COLLABORATORS

Manuel Perez-Quinones, Barbara Ryder, Dennis Kafura, Naren Ramakrishnan, Ali Butt, Virginia Tech CS; E. Scott Geller, Virginia Tech Psychology;