

DANFENG (DAPHNE) YAO

CURRICULUM VITAE

Division of Computer and Information Sciences
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RESEARCH INTERESTS

User-centric and personalized security and privacy, proactive botnet and anomaly detection, social- and human-behavior pattern recognition

EDUCATION

Ph.D., **Brown University**, Providence, RI 2007
M.S., **Indiana University**, Bloomington, IN 2002
B.S., **Peking University**, Beijing, China 1998

EMPLOYMENT

Department of Computer Science Rutgers University, New Brunswick, NJ Jan. 2008 – Present
Assistant Professor
CERIAS, Purdue University, West Lafayette IN Sep. 2006 – Dec. 2008
Visiting scholar (With Professor Elisa Bertino and Mikhail J. Atallah)
HP Systems Security Lab, Princeton, NJ May 2006 – Aug. 2006
Research intern (With Dr. Stuart Haber)
IAM Technology Inc., Providence, RI Apr. 2005 – May. 2007
Consultant (With David Croston, CEO)
Center of Genomics and Bioinformatics, Indiana University, Bloomington May 2001 - Aug. 2002
Research assistant (With Dr. Donald Gilbert)
Department of Chemistry, Princeton University May 1999 - Dec. 2000
Research assistant (With Professor Daniel Kahne)

TEACHING

Computer Science Department Rutgers University
CS672 Information Security Instructor, Fall 2008
CS352 Internet Technology Instructor, Spring 2008
CS500:04 Light Seminar: Secure Information Sharing Instructor, Spring 2008

HONORS

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

GRANTS

1. CT - ISG: ROME: Robust Measurement in Sensor Networks. National Science Foundation. PI: Yanyong Zhang, Co-PI: Danfeng Yao, Co-PI: Hui Xiong. \$400,000. Sep. 2008.

2. 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. Jan. 2008.

PEER-REVIEWED CONFERENCES/WORKSHOPS

1. SelectAudit: A Secure and Efficient Audit Framework for Networked Virtual Environments. Tuan Phan and Danfeng Yao. In *Proceedings of the International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom)*, **Invited paper**. Nov. 13-16, 2008. Orlando, Florida.
2. Design and Implementation of an Open Framework for Secure Communication in Mashup Applications. Saman Zarandioon, Danfeng (Daphne) Yao, and Vinod Ganapathy. In *Proceedings of Annual Computer Security Applications Conference (ACSAC)*. Dec. 8-12, 2008, Anaheim, CA .
3. Securing Geographic Routing in Mobile Ad-hoc Networks. Vivek Pathak, Danfeng Yao, and Liviu Iftode. In *Proceedings of International Conference on Vehicular Electronics and Safety (ICVES)*. September 22-24, 2008. Columbus, Ohio.
4. Improving Email Trustworthiness through Peer-to-peer Sender Authentication. Vivek Pathak, Danfeng Yao, and Liviu Iftode. *Proceedings of the Fifth Conference on Email and Anti-Spam (CEAS)*. Microsoft Research Silicon Valley, Mountain View, California. Aug 21-22, 2008.
5. An Ad Hoc Trust Inference Model for Flexible and Controlled Information Sharing. Danfeng Yao. In *Proceedings of International Conference on Security and Management (SAM)*. 555-561. Las Vegas, NV. July, 2008.
6. Efficient signature schemes supporting redaction, pseudonymization, and data deidentification. Stuart Haber, Yasuo Hatano, Yoshinori Honda, William Horne, Kunihiko Miyazaki, Tomas Sander, Satoru Tezuka, and Danfeng Yao. In *ACM Symposium on Information, Computer & Communication Security (ASIACCS)*. 353-362. Mar. 2008.
7. 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.
8. Isabel F. Cruz, Roberto Tamassia, and Danfeng Yao. Privacy-Preserving Schema Matching Using Mutual Information. Extended Abstract. 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.
9. 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.
10. 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**.
11. 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.
12. 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.

13. 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.
14. 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.
15. 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.
16. 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.
17. 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.

JOURNALS AND BOOK CHAPTERS

1. Danfeng Yao, Nelly Fazio, Yevgeniy Dodis, and Anna Lysyanskaya. Forward-Secure Hierarchical IBE with Applications to Broadcast Encryption Schemes. In *IOS Press Cryptology and Information Security Series on Identity-Based Cryptography*. Editors: Marc Joye and Gregory Neven. Oct. 2008.
2. 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.
3. Danfeng Yao, Keith Frikken, Mike Atallah, Roberto Tamassia. Private Information: To Reveal or Not To Reveal. *ACM Transactions on Information and System Security*. 12(1). Feb. 2009.
4. 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. Jul. 2007.
5. Danfeng Yao and Roberto Tamassia. Compact and Anonymous Role-Based Authorization Chain. *ACM Transactions on Information and System Security*. To appear. Mar. 2009.

SELECT TALKS

1. Secure and Flexible Information Integration and Sharing for Crisis Communication in Pervasive Computing Environments. *Department of Homeland Security Center of Excellence Annual Meeting*. Baltimore, MD. Nov. 2008.
2. Keystroke Dynamics Authentication and Human-Behavior Driven Bot Detection. *Stevens Institute of Technology Electrical and Computer Engineering Departmental Seminar*, Hoboken, NJ. Oct. 2008.
3. 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.
4. Verification of Integrity for Outsourced Content Publishing and Database Queries. *Purdue University CERIAS Seminar*, West Lafayette, IN. Oct. 2006.

5. Trust Management and Private Communication in Role-Based Systems. *Purdue University Computer Science Departmental Seminar*, West Lafayette, IN. Nov. 2005.
6. Trust and Service Negotiations Using WSPL. Sun Microsystems Lab, Burlington MA. Nov. 2003.

STUDENTS

Brian Thompson (3rd-year Ph.D. student)
Qian Yang (3rd-year Ph.D. student, female)
Chih-Cheng Chang (2nd-year Ph.D. student)
Huijun Xiong (1st-year Ph.D. student, female)
Saman Zarandioon (3rd-year Ph.D. student, co-advise with Prof. Vinod Ganapathy)
Vivek Pathak (6th-year Ph.D. student, co-advise with Prof. Liviu Iftode)
Nitya Vyas (1st-year M.S. student)
Deian Stefan (Undergraduate at Cooper Union College, NYC)

PROFESSIONAL ACTIVITIES

Program Committee member for *Network Security and Privacy Track at IEEE International Conference on Computer Communications and Networks (ICCCN) '09, IFIPTM 2009 - Joint iTrust and PST Conferences on Privacy, Trust Management and Security, Create-Net/ICST CollaborateCom '08, 23rd ACM Symposium on Applied Computing, IEEE Information Assurance Workshop '07, 6th International Workshop on Privacy Aspects of Data Mining.*

Reviewer for *IEEE Transactions on Knowledge and Data Engineering, Usenix Annual Technical Conference '08, IEEE Symposium on Security and Privacy '07, International Conference on Data Engineering '07, Journal of Computer Security, International Workshop on Practice and Theory in Public Key Cryptography '05, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Vehicular Technology, IEEE Transactions on Dependable and Secure Computing, Journal of Systems and Software.*

Member in Center for Discrete Mathematics & Theoretical Computer Science (DIMACS), Homeland Security Center for Dynamic Data Analysis (DyDAn), IEEE, and ACM.

PATENTS

1. Integrity Verification of Pseudonymized Documents. Stuart Haber, William G. Horne, Tomas Sander, and Danfeng Yao. U.S. Patent pending. Sep. 2007.
2. Notarized Federated Identity Management for Web Services. Michael T. Goodrich, Roberto Tamassia, and Danfeng Yao. U.S. patent pending. Jul. 28, 2006.

PERSONAL INFORMATION

Female, permanent resident of United States.

REFERENCES

Professor Eric Allender

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Professor Mikhail J. Atallah

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