

## Ping Ji

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### Research Interests

Advanced Computer Network Protocols and Applications, Wireless and Mobile networks,  
Network Security and Forensics

### Education

- ❖ **PhD, Computer Science** University of Massachusetts at Amherst, Sept. 2003  
Advanced Computer Networking Research Group  
Advisors: Professors Jim Kurose and Don Towsley  
*Thesis title:* Design, Analysis and Signaling for Advanced Distributed Networks Services
- ❖ **BS, Computer Science and Technology** Tsinghua University, Beijing China, Jul. 1998

### Professional Experiences

- ❖ **Professor:** Department of Mathematics and Computer Science, John Jay College  
Ph.D. Program in Computer Science, Graduate Center  
City University of New York Jan. 2010 – present
- ❖ **Associate Professor:** Department of Mathematics and Computer Science, John Jay College  
Ph.D. Program in Computer Science, Graduate Center  
City University of New York Jan. 2008 – Dec. 2009
- ❖ **Assistant Professor:** Department of Mathematics and Computer Science, John Jay College  
Ph.D. Program in Computer Science, Graduate Center  
City University of New York Sept. 2003 – Dec. 2007

### Publications

#### Journal Publications:

- Robert Shullich, Jie Chu, **Ping Ji**, Weifeng Chen, “A Survey of Research in Stepping Stone Detection”, *International Journal of Electronic Commerce Studies*, volume 2, number 2, 2011
- **Ping Ji**, Zihui Ge, Jim Kurose and Don Towsley, “A Comparison of Hard-state and Soft-state Signaling Protocols”, *IEEE/ACM Transaction on Networking (TON)*, volume 15, number 2, page 281-294, 2007
- Zihui Ge, **Ping Ji**, Prashant Shenoy, “Design and Analysis of A Demand Adaptive and Locality Aware Streaming Media Server Cluster”, *Multimedia Systems Journal*, volume 13, number 3, page 235-249, 2007
- Omer Demir, **Ping Ji**, Jinwoo Kim, “Session Based Packet Marking and Auditing for Network Forensics”, *International Journal of Digital Evidence*, Spring Issue 2007
- **Ping Ji**, Benyuan Liu, Don Towsley, Zihui Ge and Jim Kurose, “Modeling Frame-level Errors in GSM Wireless Channels”, *Journal of Special Issue of Performance Evaluation*, volume 55, numbers 1-2, page 165-181, 2004

### Conference Papers:

- Yongjie Cai and **Ping Ji**, “A Measurement Study for Understanding Wireless Forensic Monitoring”, in Proceedings of the *First International Conference on Digital Forensics and Investigation (ICDFI)*, Beijing China, 2012
- Jie Chu, Zihui Ge, Richard Huber, **Ping Ji**, Jennifer Yates, and Yung-Chao Yu, “Analyze Logs of the Network Element in Real Time for Intrusion Detection”, in Proceedings of the *15<sup>th</sup> International Symposium On Research in Attacks, Intrusions and Defenses (RAID)*, Amsterdam Netherlands, Sept. 2012
- Yongjie Cai and **Ping Ji**, “Security Monitoring for Wireless Network Forensics (SMoWF)”, in Proceedings of *Systematic Approaches to Digital Forensic Engineering (SADFE)*, Vancouver Canada, Sept 2012
- R. Shullich, Jie Chu, **Ping Ji**, and W. Chen, “A Survey of Research in Stepping-Stone Detection” in proceedings of *International Conference on Internet Studies*, Nov. 2010, Taipei Taiwan
- M. Ksionsk, **Ping Ji** and W. Chen, “Attacks on BitTorrent – An Experimental Study”, in proceedings of *eForensics*, Nov. 2010, Shanghai China
- R. Zhang, **Ping Ji**, D. Mylaraswamy, M. Srivastava and S. Zahedi, “Cooperative Sensor Anomaly Detection Using Global Information”, *Annual Conference of International Technology Alliance (ACITA)*, Sept. 2010, London UK
- **Ping Ji**, D. Mylaraswamy, M. Srivastava and S. Zahedi, “PCA-Based Approaches for Sensor Error Detection at Global Layer”, Short paper, *Annual Conference of International Technology Alliance (ACITA)*, Sept. 2009
- D. Mylaraswamy, **Ping Ji**, M. Srivastava and S. Zahedi, “Formal Grammar for Recognizing Sensor Misbehavior Events”, Short paper, *Annual Conference of International Technology Alliance (ACITA)*, Sept. 2009
- J. Ho, **Ping Ji**, W. Chen, R. Hsieh, “Identifying Google Talk Packets”, *IEEE Workshop on Cybercrime and Computer Forensics*, June 2009
- M. Perelman, **Ping Ji** and W. Chen, “Traffic and Security Analysis on Sony PlayStation 3”, *IEEE Workshop on Cybercrime and Computer Forensics*, June 2009
- S. Zahedi, M. Szczodrak, **Ping Ji**, D. Mylaraswamy, M. Srivastava and R. Young, “Tiered Architecture for On-line Detection, Isolation, and Repair of Faults in Wireless Sensor Networks”, *MILCOM*, Nov. 2008
- **Ping Ji**, Marcin Szczodrak, “A Multivariate Model for Data Cleansing in Sensor Networks”, Short paper, *Annual Conference of International Technology Alliance (ACITA)*, Sept. 2008
- Marcin Szczodrak, S. Zahedi, **Ping Ji**, D. Mylaraswamy, M. Srivastava and R. Young, “Simulation Framework for QoI Characterization of Sensor Networks in the Presents of Faults”, Short paper, *Annual Conference of International Technology Alliance (ACITA)*, Sept. 2008
- Sadaf Zahedi, M. Szczodrak, **Ping Ji**, D. Mylaraswamy, M. Srivastava and R. Young, “Two-Tier Framework for Sensor Fault Characterization in Sensor Networks”, Short paper, *Annual Conference of International Technology Alliance (ACITA)*, Sept. 2008
- Emmanuel Velasco, Weifeng Chen, **Ping Ji**, Raymond Hsieh, “Challenges of Location Tracking Techniques in Wireless Forensics”, *The Fourth International Conference on Intelligent Information Hiding and Multimedia Signal Processing (IIHMSP)*, Harbin, China, Aug. 2008
- Emmanuel Velasco, Weifeng Chen, **Ping Ji**, Raymond Hsieh, “Wireless Forensic: A New Radio Frequency Based Locating System”, *IEEE International Conference on Intelligence and Security Informatics - Pacific Asia Workshop on Cybercrime and Computer Forensics (PACCF)*, Taipei, Taiwan, Jun. 2008

- Xiaowen Zhang, Xiaowei Xu, Ke Tang, Andis Kwan, **Ping Ji**, Lin Leung, Xiangdong Li, Michael Anshel, “A Simple Secure Quantum Authorization Scheme”, *SPIE Defense and Security Symposium, April 2007*
- Ke Tang, **Ping Ji**, Xiaowen Zhang, “Quantum Entanglement Assisted Key Distribution”, *SPIE Defense and Security Symposium, April 2007*
- Omer Demir, **Ping Ji**, Jinwoo Kim, “Session-Based Logging (SBL) for IP-Traceback on Network Forensics”, *International Conference on Security and Management, June 2006*
- **Ping Ji**, Zihui Ge, Jim Kurose and Don Towsley, “A Comparison of Hard-state and Soft-state Signaling Protocols”, *ACM SIGCOMM 2003*.
- Zihui Ge, **Ping Ji**, Jim Kurose and Don Towsley, “Matchmaker: A Distributed Publish/Subscribe Architecture”, *IEEE International Conference on Network Protocols (ICNP), Nov. 2003*.
- **Ping Ji**, Benyuan Liu, Don Towsley and Jim Kurose, “Modeling Frame-level Errors in GSM Wireless Channels”, in *Proceedings of IEEE Globecom, Internet Performance Symposium (IPS)*, Nov 2002.
- **Ping Ji**, Zihui Ge, Jim Kurose and Don Towsley, “Signaling Protocols for Distributed Multicast-Based Publish/Subscribe Applications”, *presented in OPENSIG*, October 2002, Lexington Kentucky, USA. *Umass CMPSCI Technical Report 02-36*.
- Zihui Ge, **Ping Ji**, Jim Kurose and Don Towsley, “Min-Cost Matchmaker Problem in Distributed Publish/Subscribe Infrastructures”, *presented in OPENSIG*, October 2002, Lexington Kentucky, USA. *Umass CMPSCI Technical Report 02-19*
- Zihui Ge, **Ping Ji** and Prashant Shenoy, “A Demand Adaptive and Locality Aware (DALA) Streaming Media Server Cluster Architecture”, *Proceedings of NOSSDAV 2002*, May 2002, Miami, Florida, USA.
- S.Zabele, M.Dorsch, Z.Ge, **P.Ji**, M.Keaton, J.Kurose, J.Shapiro and D.Towsley, “SANDS: Specialized Active Networking for Distributed Simulation”, *IEEE DARPA Active Networks Conference and Exposition*, May 2002, San Francisco, California, USA.
- **Ping Ji**, Jim Kurose and Don Towsley, “Activating and Deactivating Repair Servers in Active Multicast Trees”, *Proceedings of Tyrrhenian International Workshop on Digital Communications 2001 (IWDC '01)*, Sep., 2001
- **Ping Ji**, Jim Kurose and Bev Woolf, “Student Behavioral Model Based Prefetching in an Online Tutoring System”, *Umass CMPSCI Technical Report 01-27*.

#### **Awards and Grants**

1. **NSF-CISE** grant on Collaborative Research: Novel Forensic Analysis for Crimes Involving Mobile Systems, Sept. 2009 – August 2013
2. **NSF-SFS** grant on Collaborative Research: A Northeast Partnership for Developing the Information Assurance Workforce, Sept. 2008 – August 2010
3. Department of the **US Army/United Kingdom Ministry of Defense** Grant on International Technology Alliance (ITA), 2006 – 2011
4. Sloan Foundation Grant, Mathematics Group Leader for Online Courses, Sept. 2006 – May 2007
5. John Jay College Research Assistant Program Award, 2006 – 2007
6. PSC-CUNY Research Award, Jul. 2004 – Jun. 2009 (each year), Jul. 2010 – Jun. 2011

## Graduate Students:

### Ph.D. Thesis Advisor for:

Yongjie Cai (CUNY Graduate Center)  
Jie Chu (CUNY Graduate Center)  
Xing Su (CUNY Graduate Center)  
Marcin Szczodrak (now in Columbia University)

### Ph.D. Thesis Committee Member for:

Rui Zhang, Simon Shamoun, Omer Demir, Zeki Bilgin, Eman Abdu, Jiang Wu, Constantinos Djouvas, Qinghai Gao, Ke Tang,

## Teaching Experience

### ❖ Graduate Courses:

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| ○ Network Security and Forensics       | <b>Invited International Scholar Course Series</b><br>Dept. of Electronic Engineering, Tsinghua University, China, Jun 8 – Jun 26, 2009 |
| ○ CSc72010: Computer Networks          | Computer Science PhD Program, CUNY GC, Spring/12  |
| ○ CSc82100: Network Forensics          | Computer Science PhD Program, CUNY GC, Spring/09  |
| ○ CSc82005: Advanced Computer Networks | CS PhD Program, CUNY GC, Fall/07, Fall/12   |
| ○ FCM 745: Network Forensics           | Master's Program in Forensics Computing<br>CUNY John Jay College, Fall/06, Fall/07, Fall/08, Fall/11, Fall/12                           |
| ○ FCM 742: Network Security            | Master's Program in Forensics Computing,<br>CUNY John Jay College, Fall/04  |

### ❖ Undergraduate Courses:

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| ○ Mat 379: Computer Networks                       | Spring 2006, Spring/12                 |
| ○ Mat 279: Data Communication and the Internet     | Fall/03, Spring/04, Spring/05, Fall/08 |
| ○ Mat 272: Object Oriented Programming             | Fall 2005, Spring 2006                 |
| ○ Mat 204: Discrete Mathematics                    | Fall 2005                              |
| ○ Mat 105: College Algebra                         | Fall 2004                              |
| ○ Mat 100: Introduction on Basic Mathematic Skills | Spring 2006                            |

## Other Professional Activities

### Conference Chair:

- First Annual ACM Northeast Digital Forensics Exchange (NeFX), July 20 to 21, 2009  
John Jay College of Criminal Justice, CUNY, New York, NY

### Journal Editor

- EURASIP Journal on Wireless Communications and Networking Special Issue on Theoretical Foundations of Wireless Networks, 2009 – 2010

### Technical Program Committee Member

- IFIP/TC6 NETWORKING 2010, 2013
- The 12<sup>th</sup> Annual DFRWS Digital Forensics Research Conference, 2012
- The First International Conference on Digital Forensics and Investigation (ICDFI), Beijing China, 2012
- Systematic Approaches to Digital Forensic Engineering (SADFE), Vancouver Canada, Sept 2012

- First Annual ACM Northeast Digital Forensics Exchange (NeFX), 2010
- IEEE Globecom 2010
- ISWCS – International Symposium on Wireless Communication Systems, 2009
- IPCCC – International Performance Computing and Communications Conference, 2007
- ICC – Computer and Communications Network Security Symposium, 2007
- IWCMC – Computer and Network Security Symposium, 2007

**Referee Service for Peer-reviewed Journal and Conference**

- IEEE INFOCOM (Institute of Electrical and Electronics Engineers Conference on Computer Communications) 2004, 2005, 2009
- Elsevier, The International Journal of Computer Networks (COMNET)
- IEEE Globecom 2007

**University Committee Services:**

**CUNY – Graduate Center**

- Executive Committee of Computer Science PhD Program, 2010 - present

**CUNY – John Jay College**

- Institutional Review Board (IRB) of John Jay College, 2004 – 2011
- Department Representative in College Council, 2004 – 2006, 2008 – 2009
- Department Representative in Faculty Senate, 2004 – 2006, 2008 – 2009
- Executive Committee of College Council, 2005 – 2006
- College Committee on Undergraduate Admissions, 2004 – 2005
- Personnel and Budget Committee, Department of Mathematics and Computer Science, John Jay College, 2006 – 2008
- Department Committee on Hear Appeals of Academic Evaluation, 2004 – 2005, 2006 – 2007

**Professional Membership:**

- Institute of Electrical and Electronics Engineers (IEEE)
- Association for Computer Machinery (ACM)