Chen Chen

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EDUCATION

- **Ph.D. Student**, Computer and Information Science — Sep 2011 - Present
  University of Pennsylvania, Philadelphia, PA
  Advisors: Boon Thau Loo and Limin Jia (CMU)
  GPA: 3.93/4.00
- **Bachelor of Science**, Information Security — Sep 2007 - Sep 2011
  School of Computer Science
  Fudan University, Shanghai, China
  GPA: 3.56/4.00; Major GPA: 3.90/4.00; Rank: 3/32

PUBLICATIONS

- **A Program Logic for Secure Routing Protocols**
  Chen Chen, Limin Jia, Hao Xu, Cheng Luo, Wenchao Zhou and Boon Thau Loo
  In the 34th IFIP International Conference on Formal Techniques for Distributed Objects, Components and Systems (FORTE 2014), June 2014

- **Proof-based Verification of Software Defined Networks**
  Chen Chen, Limin Jia, Wenchao Zhou, and Boon Thau Loo
  In the Open Networking Summit (ONS), March 2014

- **Reduction-based Security Analysis of Internet Routing Protocols**
  Chen Chen, Limin Jia, Wenchao Zhou, and Boon Thau Loo
  In the 2nd International Workshop on Rigorous Protocol Engineering (WRiPE), Oct 2012
  Co-located with 20th IEEE International Conference on Network Protocols (ICNP)

- **Datacast: A Scalable and Efficient Reliable Group Data Delivery Service for Data Centers**
  Jiaxin Cao, Chuanxiong Guo, Guohan Lu, Yongqiang Xiong, Yixin Zheng, Yongguang Zhang, Yibo Zhu, and Chen Chen
  In the 8th International Conference on emerging Networking EXperiments and Technologies (CoNEXT), Dec 2012

- **Towards a Secure and Verifiable Future Internet**
  Limin Jia, Chen Chen, Sangeetha A.Jyothi, Wenchao Zhou, Suyog Mapara and Boon Thau Loo
  In the Off the Beaten Track: Underrepresented Problems for Programming Language Researchers(OBT), Jan 2012

RESEARCH EXPERIENCE

University of Pennsylvania, Research Assistant, Sep 2011 - Present

- **Towards a Secure and Verifiable Future Internet** Sep 2011 – Present
  Developing a unified framework for combining implementation and formal verification of security properties in routing protocol and routing architecture. NDlog – a networking declarative language is used to specify protocols and architectures. The specification document can be both implemented in RapidNet and verified by Coq.

  (in collaboration with Prof. Boon Thau Loo, Dr. Limin Jia and Prof. Wenchao Zhou (Georgetown University))

AT&T Labs Research, Research Assistant, Jun 2013 - Aug 2013

- **Software Defined Networks** Jun 2013 - Present
  Building infrastructure supporting multi-datacenter Layer-2 Network. SDN controllers are used to achieve scalability by replacing broadcast traffic, such as ARP requests and DHCP requests/replies, with unicast traffic to the controller. Live migration can be supported naturally by our system.

  (in collaboration with Dr. Changbin Liu (Senior Member of Technical Staff, AT&T) and Prof. Boon Thau Loo)

Microsoft Research Asia, Research Assistant, Apr 2010 - Oct 2010

- **Multicast in Data Center Network** Apr 2010 - Oct 2010
  Developed algorithms for multicast in data center network. Constructed optimal multicast trees for different large-scale architectures in seconds, including Bcube, FatTree and Torus. Compared algorithms with BitTorrent protocols for optimization evaluation.

  (in collaboration with Dr. Jiaxin Cao, Dr. Chuanxiong Guo, Dr. Haitao Wu, Dr. Yongqiang Xiong)

Fudan University, Research Assistant, Sep 2009 - Feb 2010

- **Network Coding for Highly Reliable P2P Network** Sep 2009 - Feb 2010
  Implemented hierarchical P2P network based on network coding with C#. Reduced file sharing time in distributed file transmission with network coding. Compared the performance of network coding with traditional file sharing protocol: BitTorrent and showed that network coding is quicker and effective in distributing scarce information.

  (in collaboration with Prof. Xin Wang, Prof. Jin Zhao)

HONORS

- **National Scholarship 1st Prize** 2009 - 2010
  Top 1% student in Fudan University(i.e. Top 1 student in the major) is awarded for excellent academic performance. One student every two years for the same major
- **Tung OOCL Scholarship 1st Prize** 2008 - 2009
  Top 1% student in the major is awarded for excellent academic performance