Yang Chi

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EXPERIENCE

12/2013 - Present: Software Engineer, Cisco Systems

EDUCATION

09/2008 - Present: Ph.D. in Computer Science & Engineering, University of Cincinnati
Dissertation: Effective Use of Network Coding in Multi-hop Wireless Networks

09/2004 - 04/2008: B.S. in Network Engineering (CS equivalent), Chongqing University

SKILLS

- Everyday Languages: C, C++, Python, PHP, LaTeX.
- Also know: HTML, CSS, MySQL, Shell, JavaScript, Java, JSP, Ruby.
- Experience: Linux/Unix programming environment, Protocol stack in Linux kernel, Network Simulation (ns-3), Virtualization, Cloud service (OpenShift, Heroku), OpenFlow and SDN (Mininet, POX)
- Strong background in Computer Networks and TCP/IP Protocol Stack.
- Solid knowledge in Operating Systems, Distributed Computing, Algorithms and Data Structure.

RESEARCH WORKS

Network Coding in Multi-Radio Networks: Design and implement an opportunistic and independent 2.5 layer protocol for network coding in multi-radio networks. First distributed and practical solution to this problem. Fully implemented in ns-3 with C++. Throughput gain in some cases can be 10%. Latency gain around 50% is also achieved.
Publication: *Murco: An Opportunistic Network Coding Framework in Multi-Radio Networks, IEEE ICC 2012, first author*

Practical Coding-Aware Routing Protocols: Propose and design a new routing metric ETOX and a hybrid routing protocol HyCare for network coding capable networks. ETOX consider both coding opportunities and wireless channel quality. HyCare has both link-state routing and reverse forwarding functions. Fully implemented in ns-3 with C++. Achieve around 100% throughput gain compared to classical routing protocols with network coding in wireless mesh network backbone.
Publication: *HyCare: Hybrid Coding-Aware Routing with ETOX Metric in Multi-hop Wireless Networks, to appear at IEEE MASS 2013, first author*

Network Locality in Wireless Networks: This is the first validation of network locality in both WLAN and wireless mesh networks. Created packet parser in Python to analyze more than 1.3 billion packets (more than 130GB of data) collected from both real network traces and simulations. Examined 4 common network locality characteristics with 5 different routing schemes in multi-hop wireless networks.
Publication: *Network Locality in Wireless Networks, ACS/IEEE AICCSA 2013, first author*

Decoding-Delay Sensitive Coding Scheme in TCP: Designing a novel coding scheme for network-coded TCP to solve the decoding delay problem in such TCP implementations.

OTHER EXPERIENCE

Web Developer University of Cincinnati, 04/2012 - 06/2013: Implement E-Portfolio system, an online portfolio and assessment platform, for College of Engineering and Applied Sciences at University of Cincinnati using PHP and MySQL.

Teaching Assistant University of Cincinnati, Spring 2010-2011: in Ad Hoc and Sensor Networks class.

Internship Institute of Computing Technology, Chinese Academy of Sciences, Summer 2007: Tested functions and reliability of a SOA framework with Java.