Yang Chi

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EDUCATION

09/2008 - Present: Ph.D. in Computer Science & Engineering, University of Cincinnati,
GPA: 3.8, *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, OpenFlow and SDN (Mininet, POX), Cloud and Saas Configuration and Deployment (OpenShift and Heroku)
- 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. Throughput gain in some cases can be 10%. Latency gain around 50% is also achieved.
Source code of Yanci, in C++, my implementation of COPE: `https://github.com/yangchi/ns3-yanci`
Source code Murco in C++: `https://github.com/yangchi/Murco`
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. Achieve around 100% throughput gain compared to classical routing protocols with network coding in wireless mesh network backbone.
Source code in C++: `https://github.com/yangchi/ns3-ETOX`
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.
Source code in Python: `https://bitbucket.org/yangchi/trace_parser`
Publication: *Network Locality in Wireless Networks, ACS/IEEE AICCSA 2013, first author*

Decoding-Delay Sensitive Coding Scheme in TCP: On-going project. Designing a novel coding scheme for network-coded TCP to solve the decoding delay problem in such TCP implementations. This one will be implemented in Linux kernel 3.6 and the experiment will be carried on in a Raspberry-pi based wireless testbed.

OTHER EXPERIENCE

Web Developer University of Cincinnati, 04/2012 - 06/2013: Design and 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** as well as **HTML, CSS and JavaScript**.
Source code, mostly in PHP: `https://bitbucket.org/yangchi/e-portfolio`

Teaching Assistant University of Cincinnati, Spring 2010-2011: 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**.