

XI CHEN

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Objective

Internship/Co-op in wireless networking, embedded system, software developing or related areas.

Education

Ph.D. in Computer Engineering, *Iowa State University*, July 2010 (Expected)

B.S. in Electrical Engineering, *University of Science and Technology of China (USTC)*, July 2006

Computer Skills

Tools: ns-2, Qualnet, Matlab, Pspice, Quartus II

Platforms: Windows XP/2000/NT, Linux/Unix

Database: MySQL, Oracle 8i

Languages: C/C++, Java, nesC, Tcl, Perl, Visual Basic, Delphi, Verilog, Keil C

Web Related: Apache, IIS, ASP, PHP, JavaScript

Deep understanding of *wireless networking protocols* (e.g., 802.11 WLAN, 802.16 WiMax, ZigBee)

Research Experience

Research Assistant

Since Fall 2006

Dr. Daji Qiao

ECE Dept. of Iowa State Univ.

Rate adaptation mechanism for wireless LANs.

- ◇ Proposed new mechanism to improve system throughput, and solve hidden node problem.
- ◇ Implementation with system level modifications in Linux kernel and **Madwifi** device driver.
- ◇ Simulated in **ns-2**, and compared with most of the existing schemes.

Resource management in multi-radio multi-channel mesh networks.

- ◇ Formulated it as a joint routing and channel assignment problem with practical considerations.
- ◇ Solved the problem using optimization tool **CPLEX**.
- ◇ **Qualnet** simulation results proved the effectiveness.

Location privacy in ad-hoc localization system.

- ◇ Devised a novel scheme to protect location privacy of anchor nodes.
- ◇ Analyzed the security level of our scheme mathematically.
- ◇ Simulated our scheme with **nesC** program in Embedded OS **TinyOS**.

Research Assistant

Fall 2004 – Fall 2006

Dr. Jinkang Zhu

PCN&SS Lab, EEIS Dept. of USTC

Focus on **signal processing**. A Kalman filter-based approach is put forward for target detection and target-background separation. It is proposed to estimate the background signal and to separate it from the target return.

Teaching Experience

Teaching Assistant, EE 201 Electric Circuits, Iowa State University, Spring 2008

Teaching Assistant, CprE 543 Wireless Network Architecture, Iowa State University, Fall 2007

Internship

Research Staff

June – Sept., 2005

Dr. Guangyou Fang

Beijing, Chinese Academy of Science

Focus on **image processing**. Using multi-resolution analysis and edge-following algorithms to propose new detection algorithm, which is used to detect horizons on Sub-bottom Images.

Projects & Demos

Java RMI and CORBA projects (C++ and JAVA)

Spring 2008

These two projects are done in the course of Distributed Systems and Middleware. The Java RMI Chatroom supports multiple chatrooms each with multiple clients (*dynamical multithread*). Client remotely call the procedure resided in server side to obtain a list of existing chatrooms. The CORBA auction system is similar to ebay, and provides bidding and selling functions as well as banking function support.

goGarcia (Crossbow-MICA motes, Stargate linux box, Laptop) Fall 2007
goGarcia is a target tracking demo system based on *WiFi* and *xbow-MICA sensor board* communication. The sensor network will sense and report the location of a triggered event. A centralized server will calculate the route and send out commands to the *Intel-Stargate Linux box* on Garcia robot, which calls TEA module to control the movement.

sBlink (Crossbow-MICA motes, Embedded TinyOS) Spring 2007
This is a distributed, self-organizing and self-healing application. In sBlink, every MICA node blinks one by one with a duration of 1 second between blinkings based on their orders of joining the network. sBlink needs to handle the events of multiple nodes' joining and leaving, as well as message collision problems.

76ers Robot (Intel 8051 Chipset, Motor Control) Spring 2005
76ers is the name of the robot we designed in the Robot Competition held by USTC in 2005. The goal in the competition is to pick up as many balls as possible and carry them to the center platform, as well as to handle collisions with other robots. We designed and made the robot (mechanics, electronics and software) *ALL by our own*.

bookCD (Oracle and PHP programming) Spring 2004
The bookCD is a disc service system for all USTC students, faculties and staffs. We wrote frontend in Delphi to record CD information into Oracle database, and provided web searching and iso format file downloading services in PHP.

Graduate Coursework

Advanced Communications	Computer Systems Performance
Advanced Protocols and Network Security	Probabilistic Methods in Computer Engineering
Wireless Network Architecture	Pervasive Computing
Random Processes for Communications	Distributed System and Middleware
Wireless Sensor Networks	Wireless Network Security

Publications

Xi Chen and Daji Qiao
“*Probabilistic-based Rate Adaptation for IEEE 802.11 WLANs*”
in Proc. of *IEEE Global Communications (GlobeCom)*, Washington D.C., Nov. 2007.

Wei Zhou, **Xi Chen**, and Daji Qiao
“*Practical Routing and Channel Assignment Scheme for Mesh Networks with Directional Antennas*”
in Proc. of *IEEE International Conference on Communications (ICC)*, Beijing, China, May 2008.

Xi Chen, Prateek Gangwal and Daji Qiao
“*Practical Rate Adaptation in Mobile Environments*”
to appear in Proc. of *IEEE International Conference on Pervasive Computing and Communications (PerCom)* **Acceptance ratio = 13%**, Galveston, TX, March 2009.

Xi Chen, Ka Yang and Daji Qiao
“*Preserving Beacon Node Location Privacy in Ad-hoc Networks*”
to be submitted.

Services

Treasurer, Iowa State University Chinese Soccer Club, since 2006
IEEE Student Member, Reviewer of ICC'07, ICCCN'07, Transaction on Wireless Communication (TWC)
Technical Staff, University Library, University of Sci. & Tech. of China, 2004 – 2006
Vice President of Sports Club, School of Information Sci. & Tech., USTC, 2004 – 2006

Honors and Awards

Professional Advancement Grant, Iowa State University, 2007
Undergraduate Research Award, University of Sci. & Tech. of China, 2005
Winner of the Paper Contest on Electromagnetic, University of Sci. & Tech. of China, 2003
Outstanding Student Scholarship, University of Sci. & Tech. of China, 2002, 2003, 2004, 2005

References

Available upon request.