

# Tao Jin

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- CONTACT INFORMATION**      **College of Computer and Information Science**  
**Northeastern University**      *Cell:* (650) 284-9530  
360 Huntington Avenue      *Fax:* (617) 373-5121  
202 West Village H      *Email:* jintao.pku@gmail.com  
Boston, MA 02115      *Web:* <http://www.ccs.neu.edu/~taojin>
- RESEARCH INTERESTS**
- ▷ Mobile and ubiquitous computing
  - ▷ Wireless networks
  - ▷ Distributed systems
- EDUCATION**
- Notheastern University**, Boston, MA, USA  
Ph.D. in **Computer Science** (expected graduation date: December 2011)  
– Advisor: **Professor Guevara Noubir**  
– GPA: 3.97/4.0  
– Graduate Courses: Computer Networks, Network Security, Advanced Algorithm, Information Retrieval, Theory of Computation, Principle of Programming Language, Network Algorithms, Distributed System, SWARM (wireless sensor network)
- Michigan Technological University**, Houghton, MI, USA  
Ph.D. in **Electrical and Computer Engineering**, Sept. 2005 ~ Jun. 2006  
– Advisor: Professor Chunxiao Chigan  
– GPA: 4.0/4.0
- Peking University**, Beijing, China  
B.Sc. in Computer Science, June 2005  
– GPA: 3.5/4.0
- HONORS AND AWARDS**
- ▷ 2011 Outstanding Research Award, CCIS, Northeastern University
  - ▷ Google ADC1 (Android Developer Challenge) Top 50 Award - **PebbleBox**
  - ▷ Undergraduate Thesis Award - **Stream-Based Anti-Virus Engine on Gateway**
- RESEARCH PROJECTS**
- OpenWiFi** (Ongoing)
- Customized WiFi routers deployed in residential broadband networks to form a testbed for residential network study
  - Remote management and firmware upgrading of OpenWiFi home routers
  - Distributed storage system at the edge of cloud
  - Hybrid P2P-CDN infrastructure to allow efficient content delivery
- SNEAP**
- A social network-enabled EAP authentication method for WiFi hotspots
  - Allow secured WiFi authentication with social network credentials
  - Implemented SNEAP module for WiFi supplicant, hostapd and free radius with Facebook authentication framework
- WiZi-Cloud**
- Dual WiFi-ZigBee radio solution on mobile devices for low power Internet access
  - Complete software/hardware solution to integrate ultra low power ZigBee on Android mobile phones and Linux-powered WiFi access points, and allow seamless radio interface switching
  - Top popular mobile applications, such as VoIP, stream media, etc. run with good performance on WiZi-Cloud, and achieves 300% better energy efficiency

## SWARM

- ZigBee-enabled Robot Auto Homing based on signal strength
- Obstacle detection with ultrasonic sensor
- C embedded programming for sensor, motion control and wireless communication
- multi-hop routing protocol design to allow cooperative sensing among robots
- Remote sensor data monitor on mobile phones

## Boston WiFi Survey (Vehicular WiFi Connectivity)

- Software system running on embedded **carPC**
- Road-side WiFi access points geo-mapping system based on Linux Wireless Extensions
- Efficiently sets up “opportunistic” WiFi connection with open access points

## WORK EXPERIENCE

**Nokia Research Center**, Palo Alto, CA, USA

### Research Intern

**Jun. 2008 ~ Aug. 2008**

- SMS-based web service protocol design and prototyping, for mobile applications in developing countries. Group communication mobile application prototyping on Symbian

**Nokia Research Center**, Palo Alto, CA, USA

### Research Intern

**May. 2007 ~ Aug. 2008**

- TCP NAT traversal mechanism design and prototyping  
Designed a TCP NAT traversal protocol, and implemented a C library for Linux, Win32 and Maemo platforms to allow P2P softwares to traverse the NAT devices and to establish direct TCP connection between peers.

## TECHNICAL SKILLS

- ▷ **Languages:** C, C++, Java, Python, Ajax, Javascript, HTML, CSS, PHP, x86 Assembly
- ▷ **Platforms:** OpenWRT, Android, Linux, Maemo, Symbian, Windows

## PUBLICATIONS

- [8] Aldo Cassola, Tao Jin, Harsh Kumar, Guevara Noubir, and Kamal Sharma, “Demo: SNEAP: A Social Network-Enabled EAP Method: No More Open Hotspots”, *in proceedings of ACM MobiSys 2011*.
- [7] Aldo Cassola, Tao Jin, Harsh Kumar, Guevara Noubir, and Kamal Sharma, “SNEAP: A Social Network-Enabled EAP Method: No More Open Hotspots”, *in proceedings of NSDI Demo, 2011*.
- [6] Tao Jin, Guevara Noubir and Bo Sheng, “WiZi-Cloud: Application-transparent Dual ZigBee-WiFi Radios for Low Power Internet Access”, *in proceedings of IEEE INFOCOM 2011*.
- [5] Tao Jin, Guevara Noubir, and Bo Sheng, “WiZi-Cloud: Integrating ZigBee into Mobile Phones for Energy Efficient Internet Access in WLANs”, *in proceedings of ACM MobiCom Demo 2010*.
- [4] Tao Jin, Guevara Noubir and Bishal Thapa, “Zero Pre-shared Secret Key Establishment in the presence of Jammers”, *in proceedings of ACM MobiHoc, 2009*.
- [3] Chao Zhou, Tao Jin, Chunxiao Chigan and Zhi Tian, “QoS-Aware Distributed Spectrum Sharing for Heterogeneous Wireless Cognitive Networks”, *Elsevier Journal of Computer Networks: Special Issue on Cognitive Wireless Networks, Vol. 52 (4), pp.864-878, 2008*.
- [2] Tao Jin, Chunxiao Chigan, “A Security-enabled Wireless Token Cluster MAC Protocol with Intelligent Token Policy”, *in proceedings of IEEE MILCOM, 2007*.
- [1] Tao Jin, Chunxiao Chigan and Zhi Tian, “Game-theoretic Distributed Spectrum Sharing for Wireless Cognitive Networks with Heterogeneous QoS”, *in proceedings of GlobeCom, 2006*.

## STARTUP EXPERIENCE

I was a co-founder of [petsnextdoor.com](http://petsnextdoor.com) and the leading developer for the web version **Pets Next Door** (<http://pets.animalcompass.org>)