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Shibo Hou

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TECHNICAL STRENGTHS

Computer skills	Programming: C&C++, Java, MATLAB, VHDL, Assembler, Latex
	Web: HTML, JavaScript/jQuery
	Database: MySQL Server/ Microsoft SQL
	Operating System: Mac OS, Windows, Linux
Networking	TCP/IP, Routing algorithms, Wireless networking
Algorithms	Excellent with data structure and common algorithms
Math Knowledge	Mathematical Modeling, Stochastic Process, Probabilities, Calculus, Matrix Theory

EDUCATION

- **North Carolina State University (NCSU), Raleigh, NC, USA**

  M.S. in Computer Engineering, Graduated May 2015

  Courses: Software Engineering, Algorithms, Database Management Systems, Computer Networks, Internet Protocols, Computer Performance Modeling, Network Systems and Services, Human Computer Interaction, Wireless Communication Systems

- **Beijing University of Posts & Telecommunications (BUPT), Beijing, China**

  M.S. Communication & Information Systems, Graduated Mar 2013

  B.S. Communication Engineering, Graduated Jun 2010

PROJECT EXPERIENCE

Database Management System Project, *NCSU* *Spring 2015*

- Designed a database to assist with the administration of the University Student Housing Office. In general, students and guests can view available housing options based on different criteria, initiate and check status of lease related requests, invoices, maintenance tickets and parking. Housing staff can view and act on the different types of requests. Created database using Oracle MySQL, managed database on Java by JDBC, built a website for Housing Office and students to operate.

Software Engineering Project, *NCSU* *Fall 2014*

- Designed a simple website using node.js, applying bootstrap to create layout and knockout.js to process dynamic content, adding visualization component by d3.js, using grunt to manage build tasks.
- Performed unit testing on mocking the server response from Twitter.

Computer Performance Modeling Project, *NCSU* *Spring 2014*

- Applied Markov process queueing-based models to simulate the general M/G/1 queueing problem in computer & communication systems by C++. Computed performance measures of throughput and delay for given queueing system with different number of servers and different queueing priorities.

Internet Protocols Project, *NCSU* *Fall 2013*

- Implemented go-back-N and selective repeat automatic repeat request (ARQ) scheme to a simple Peer-to-Peer system with a centralized index, in which a concurrent server is capable of carrying out communication with multiple clients. When peers join in this P2P system, they can add their local file names to file list in the server, and query, request to download files from some destination peers over TCP.

WORK & RESEARCH EXPERIENCE

Capgemini Consulting *Dec 2012 - Aug 2013, Shanghai*

Associate Consultant, Business & Technology Solutions (BTS) Consulting Team

- As a management consultant, assisted BTS Department win the $1,000,000 bid from China Vanke Co., Ltd to reconstruct its database management system.

- As a technical consultant, helped China Vanke Co., Ltd locate the vulnerabilities of its database system, update its master database and management platform using SAP NetWeaver Java.

Key Technologies of IMT-Advanced Self-organizing Network (SON)

Research Assistant, Wireless Signal Processing and Network Lab, BUPT *Sep 2011- Dec 2012, Beijing*

- Established Monte Carlo system level simulation platform (in Matlab) and built link level simulation platform (in C++ & Opnet) for SON.
- Set up joint optimization model considering energy efficient, system throughput and network coverage by using cooperative communication technique, applied optimization methods (Gradient Projection, Nash Equilibrium) to give closed-form optimal solution.

Green Communication

Research Assistant, Wireless Signal Processing and Network Lab, BUPT *Sep 2011- Dec 2012, Beijing*

- Surveyed and summarized user & user group mobile model and different base station energy consumption models in heterogeneous network scenario.
- Considering co-channel interference in heterogeneous network, put forward an interference management strategy and employed convex optimization method to solve the deployment of different types of base stations.

Joint Coding Modulation Diversity

Internship, Potevio Institute of Technology Co., Ltd. *Dec 2010- Jul 2011, Beijing*

- Built and debugged the whole link level simulation system and several paramount modules (such as channel estimation, turbo and LDPC coding, Q-road interleaver) using C Language on the basis of Protocol 802.11ac and 802.11ad.
- Proposed a new fast LMMSE channel estimation algorithm (using Matrix theory) under Rayleigh fading channel and verified its eminent performance.
- Regarding hardware demonstration platform, programmed the whole corresponding platform using picochip assembly language under linux, debugged through the BBU and RRU unit.

PUBLICATIONS

1. "Low Complexity Fast LMMSE-based Channel Estimation for OFDM Systems in Frequency Selective Rayleigh Fading Channels", **Shibo Hou**, Jiamo Jiang, IEEE 76th Vehicular Technology Conference, Quebec, Canada, 2012
2. "An Effective Interference Management Framework to Achieve Energy-Efficient Communications for Heterogeneous Network through Cognitive Sensing", **Shibo Hou**, Xing Zhang, Huanyang Zheng, Long Zhao, Wei Fang, IEEE 7th International Conference on Communications and Networking in China, Kunming, China, 2012
3. "A Gradient Projection Based Self-Optimizing Algorithm for Inter-cell Interference Coordination in Downlink OFDMA Networks", Xuena Li, Hao Jin, Jiamo Jiang, **Shibo Hou**, Mugen Peng, Gongpu Wang, International Workshop on SON, China, August 2012

ACTIVITIES

- *Sep 2010 - Dec 2012:* Research Assistant, Wireless Signal Processing & Network Lab, BUPT
- *Apr 2010 - May 2010:* Culture Exchange Program at Waseda University, Tokyo

HONORS

- The 2010 Mathematical Contest in Modeling (MCM), Meritorious Winner *May 2010*
- The 2009 Beijing College Student Electronic Design Contest, Successful Participant *Dec 2009*
- The 4th "Freescale Cup" National Intelligent Car Competition, 3rd Prize *Jul 2009*
- The 2009 Mathematical Contest in Modeling, Meritorious Winner *Apr 2009*
- The 18th Beijing Mathematics Competition for University Students, Bronze Medal *Dec 2007*
- "Outstanding Student Leaders" Award of BUPT *Sep 2011*
- First-Class Scholarship for Excellent Students at BUPT *2007- 2009*