Yong Ding

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Department of Computer Science and Engineering, Michigan State University, East Lansing, MI 48824

Education

Michigan State University, USA Aug. 2005 -- Present
Ph.D. Candidate in Computer Science, GPA 4.0
Southeast University, Nanjing, China Aug. 1997 -- April.2004
B.E and M.E. in Computer Science and Engineering

Awards

- **Summer Retention Fellowship**, Michigan State University, 2006
- **Meritorious** in Mathematical Contest in Modeling (MCM), by Consortium for Mathematics and Its Applications (COMAP), United States, 2000.
- **Excellent Student Scholarship**, by Trend Micro Inc., 2000
- **Excellent Student Scholarship**, by Computer World Magazine, China, 1999

Work Experience

Software Engineering Intern, VMWare, USA May.2008--Aug.2008

- Developed system management applications on VMVisor product, using C++ and Perforce.
- Improved software quality of CIM module of VMVisor, using Coverity, Valgrind tools.

Research and Development Engineer, IBM China Research Laboratory May.2004--Jul.2005

- Designed and implemented "Desktop Snapshot", which captures PC users' runtime working environment (applications, documents, appearance etc.) and restores it later on users' demand.
- Developed under Windows using C++.
- Filed a patent, "Method and System for Avoidance of Software Conflict".

Software Engineering Intern, Fiberhome Secure Networks Inc., China Feb.2002--Feb.2003

- Worked in a 4-member group to design and implement an application level network monitoring system.
- Designed and implemented packet capturing, IP packet filtering, and security rule parsing modules.
- Developed under Linux using C/C++ and Tcpdump, CVS tools.

Member, Eastern Regional Center of China Education and Research Network Sept.2001--Sept.2003

- Responsible for collecting logs and traces from vulnerable servers, analyzing network intrusion techniques by implementing dummy attacks, extracting their features, and adding rules into intrusion detection systems.
- Experimented under Linux, and used C, Tcpdump, Sniffer, and NMap.

Research Experience

Research Assistant, ELANS Lab, Michigan State University Jun.2006--Current

Multi-Path Multi-Source Video On-Demand Streaming in Wireless Mesh Networks

- Designed and implemented efficient multi-path routing algorithms for multi-source video on-demand applications in large-scale multi-channel multi-radio wireless mesh networks.
- Implemented the algorithms and performed simulations using C++, Python and NS2.

Improving Throughput in Wireless Mesh Networks

- Designed and implemented efficient channel allocation and routing algorithms in multi-channel multi-radio wireless mesh networks, which improves the total network throughput.
- Set up a test-bed to measure the network performance of interfering wireless links.
- Implemented the algorithms and performed simulations using C++, Python and NS2.

Building Energy Efficient Wireless Sensor Networks

- Designed and implemented a distributed node sleep scheduling algorithm in redundant wireless sensor networks, which conserves energy consumption of sensors and thus improves network lifetime.
- Implemented the algorithms and performed simulations using C++ and Matlab.

Teaching Experience

Teaching Assistant, Michigan State University Aug.2005--May.2006

CSE131 – Introduction to Technical Problem Solving with Computer Tools.

Responsible for leading problem solving sessions in computer labs and communicating with students about the problems they have. Got TA evaluation over 3.5/4.0 from students in the second semester.

Knowledge and Skills

- Proficient in C/C++, Python, Matlab, comfortable with Java, Shell scripts, PHP and MySQL.
- Familiar with Linux and Windows systems.
- Familiar with code analysis tools such as Coverity and Valgrind.
- Deep understanding of computer networking, especially in TCP/IP and application protocols.
- Familiar with network diagnostic tools, such as Tcpdump, Sniffer, Snort, NMap.

Patent

- **Y. Ding,** X. Guo, H. Su, Z. Wang and S. Zhao, "Method and System for Avoidance of Software Conflict", United States Patent 20070180441, August 2007, *http://www.freepatentsonline.com/20070180441.html*

Selected Publications

[1] **Y. Ding**, Y. Huang, G. Zeng and L. Xiao, "Channel Assignment with Partially Overlapping Channels in Wireless Mesh Networks", *in 4th International Wireless Internet Conference (**WICON**), 2008*

[2] **Y. Ding,** C. Wang and L. Xiao, "A Static-Node Assisted Adaptive Routing Protocol in Vehicular Networks", in *4th ACM International Workshop on Vehicular Ad Hoc Networks (**VANET**)*, 2007

[3] **Y. Ding**, C. Wang and L. Xiao, "A Connectivity based Partition Approach for Node Scheduling in Sensor Networks ", in *3rd IEEE International Conference on Distributed Computing in Sensor Systems (**DCOSS**)*, 2007