

PERSONAL

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RESEARCH INTEREST

- Computer Architecture
- Storage Systems
- Computer Security
- Distributed Systems
- Embedded Systems
- Real-time Systems
- Cluster and Grid Computing
- Wireless Network

EDUCATION

- **Ph.D. in Computer Science**, New Mexico Tech, Socorro, NM, May 2007 (expected). GPA: 3.5
- **M.S. in Computer Science**, New York Institute of Technology, Manhattan, NY, July 2003. GPA: 4.0
- **M.S. in Computer Science**, New Mexico State University, Las Cruces, NM, January 2005. GPA: 3.75

RESEARCH EXPERIENCE

- **Power, Security, and Performance Issues in Storage Systems**
Power, security, and performance issues in modern storage systems are of critical importance. This work is intended to develop new adaptive strategies that can judiciously select appropriate power states and security services for disk I/O requests while endeavoring to guarantee various performance requirements (e.g., desired response times).
- **Power-Aware Real-time Disk Scheduling**
This research is aimed at developing scheduling techniques to achieve an optimal tradeoff between power consumption and performance for I/O-intensive tasks in heterogeneous embedded systems. It integrates real-time, energy conservation, heterogeneity, diversity of I/O devices, and resource management into a unified and dynamic environment, like distributed robots.
- **Security-Aware Real-time Scheduling**
In addition to identifying the open issues and challenges involved in developing security-aware real-time scheduling schemes, we proposed a collection of novel

real-time scheduling policies, which consider both security and real-time constraints for parallel and distributed systems.

- Security-Aware Packet Scheduling in Wireless network

GRANT PROPOSAL WRITING EXPERIENCE

- 05/2005 Security-aware Scheduling for High Performance Clusters. Helped Dr. Xiao Qin write a DOE Sandia-University Research Program grant proposal for the CS program at New Mexico Tech. The focus in this proposal is to address challenging issues related to Security-aware job scheduling in cluster systems.

TEACHING EXPERIENCE

Graduate Teaching Assistant, New Mexico Tech, Socorro, NM

January 2005 ~ Present

- Teaching Assistant for CS 122 Algorithms and Data Structures.
- Teaching Assistant for CS 325 Operating Systems.
- Teaching Assistant for CS 331 Computer Architecture.
- Teaching Assistant for CS 589 Distributed Systems.

Graduate Teaching Assistant, New Mexico State University, Las Cruces, NM

January 2003 ~ January 2005

- Teaching Assistant for CS 111 Computer Literacy.
- Teaching Assistant for CS 222 Objects Oriented.

TEACHING INTERESTS

Distributed systems, operating systems, embedded systems, computer architecture, real time systems, network, and storage systems. In addition, I am confident in designing graduate seminars on topics related to clusters and grids, which will cover cutting edge issues, including high availability cluster solutions, information security, cluster/job resource management, benchmarking tools, and network-based distributed systems.

AWARDS AND HONORS

- IEEE Student Travel Award, *the 15th Int'l Conf. Computer Communications and Networks (ICCCN)*, Oct. 2006.

- New Mexico Tech 2006 Spring Graduate Student Travel Grant.
- New Mexico Tech 2006 Fall Graduate Student Travel Grant.
- Student Travel Award, Academic Affairs, New Mexico Tech, Oct. 2006.

PROFESSIONAL SERVICES ---

Reviewer for:

- The 24th IEEE International Performance Computing and Communications Conference (IPCCC 2005).
- The 35th IEEE International Conference on Parallel Processing (ICPP 2006).
- The 25th IEEE International Performance Computing and Communications Conference (IPCCC 2006).
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PRESENTATION ---

- **M. Nijim**, X. Qin, and T. Xie, "Adaptive Quality of Security Control in Networked Parallel Disk Systems" *Proc. 15th International Conference Computer Communications and Networks (ICCCN)*, Arlington, Virginia, Oct 2006.
- **M. Nijim**, X. Qin, T. Xie" Awards: An Adaptive Write Scheme for Secure Local Disk Systems," *Proc. 25th IEEE Int'l Performance Computing and Communications Conference (IPCCC)*, April 2006.
- **M. Nijim**, T. Xie, and X. Qin," Integrating a Performance Model in Self-Managing Computer Systems under Mixed Workload Conditions," *Proc. IEEE International Conference on Information Reuse and Integration*, Aug. 2005.

PUBLICATIONS ---

Papers in Refereed Journals

- **M.Nijim**, X.Qin, and T.Xie, "Modeling and Improving Security of a Local Disk System for Write-Intensive Workloads," *ACM Transactions on Storage*. Submitted Nov. 2005; accepted July 2006.
- X.Qin, M.Alghamdi, T.Xie, **M.Nijim**, and Z.Zong, "Conserving Energy in Real-Time Wireless Networks via Message Scheduling," *IEEE Transactions on Wireless Communications*. Submitted Jan. 2006; revised Aug. 2006.
- **M.Nijim**, T.Xie, and X.Qin, "Performance Analysis of an Admission Controller for CPU- and I/O-Intensive Applications in Self-Managing

Computer Systems,” *ACM Operating Systems Review*, Vol. 39, No. 4, pp.37-45, October, 2005.

- **StReD : A Quality of Security Framework for Storage Resources in Data Grids.**
M. Nijim, X. Qin, and Z.-L. Zong, *Future Generation Computer Systems The Int’l Journal of Grid Computing*, Submitted April 2006; revised Sept. 2006; accepted Dec. 2006.
- **Energy-Efficient Scheduling for Parallel Applications on mobile clusters.**
Z.-L. Zong, **M. Nijim**, and X. Qin, *Cluster Computing: The Journal of Networks, Software Tools and Applications*. Submitted May 2006; to be revised Jan. 2007.

Papers in Refereed Conference Proceedings

- **M. Nijim**, X. Qin, and T. Xie, “Adaptive Quality of Security Control in Networked Parallel Disk Systems,” *Proc. 15th International Conference on Computer Communications and Networks (ICCCN)*, Arlington, Virginia, Oct. 2006. (**Acceptance Rate: 32%**, 71/221)
- T. Xie, X. Qin, and **M. Nijim**, “Solving Energy-Latency Dilemma: Task Allocation for Parallel Applications in Heterogeneous Embedded Systems,” *Proc. 35th International Conference on Parallel Processing (ICPP)*, Columbus, Ohio, Aug. 2006. (**Acceptance Rate: 32%**, 64/200; Impact Factor: 0.95, top 313, top 25.63%, source: CiteSeer)
- **M. Nijim**, T. Xie, Z.-L. Zong, and X. Qin, “An Adaptive Strategy for Secure Distributed Disk Systems,” NASA/IEEE Conference on Mass Storage Systems and Technologies, Work-in-Progress Session, May 2006.
- **M. Nijim**, X. Qin, T. Xie, and M. Alghamdi, “Awards: An Adaptive Write Scheme for Secure Local Disk Systems,” *Proc. 25th IEEE Int’l Performance Computing and Communications Conference (IPCCC)*, April 2006. (**Acceptance Rate: 35%**)
- T. Xie, X. Qin, and **M. Nijim**, “Sharp: A New Real-Time Scheduling Algorithm to Improve Security of Parallel Applications on Heterogeneous Clusters,” *Proc. 25th IEEE Int’l Performance Computing and Communications Conference (IPCCC)*, April 2006. (**Acceptance Rate: 35%**)
- **M. Nijim**, T. Xie, and X. Qin, “Integrating a Performance Model in Self-Managing Computer Systems under Mixed Workload Conditions,” *Proc. IEEE International Conference on Information Reuse and Integration*, Aug. 2005.
- HAGEES: A High Availability Guaranteed Energy-Efficient Scheduling Strategy for High-Performance Clusters.

- Z.-L. Zong, **M. Nijim**, M. Alghamdi, and X. Qin, *Proc. 2006 the 7th Symposium of the Los Alamos Computer Science Institute*, Santa Fe, NM, Oct. 2006.
- **Scheduling of Periodic Packets in Energy-Aware Wireless Networks.**
X. Qin, M. Alghamdi, **M. Nijim**, and Z.-L. Zong, *Proc. the 26th IEEE Int'l Performance Computing and Communications Conf. (IPCCC'07)*, New Orleans, Louisiana, April 2007.
- K. Bellam, Z. Zong, M. Alghamdi, **M. Nijim**, X. Qin, "Integrating Fault Recovery and Quality of Security in Real time applications", *Proc. IEEE International Symposium on Ubisafe Computing*, Ontario, Canada, May 2007.

Submitted Journal Papers

- Quality of Security Adaptation in Parallel Disk Systems.
X. Qin and **M. Nijim**, *IEEE Transactions on storage*. Submitted Nov. 2006.
- Energy Management for Real-Time Embedded Storage Systems with I/O Burstiness
A. Roth, T. Xie, **M. Nijim**, and X. Qin, *ACM Transactions on Embedded Computing Systems*. Submitted Feb. 2006.
- Improving fault tolerance and security in real-time embedded systems
K. Bellan, X. Qin, **M. Nijim**.
- Improving security of real-time wireless network through packet scheduling
X. Qin, **M. Nijim**, Submitted Feb. 2007.

Submitted Conference Papers

- Security-Aware Cache Partitioning Schemes for Parallel Disk Systems. **Mais Nijim**, Xiao Qin.
- Duplication-Based Scheduling Algorithms for Energy Conservation in Heterogeneous Clusters.
Ziliang Zong, **Mais Nijim**, Xiao Qin.
- Coserving Energy in Real-Time Storage Systems with I/O Burstiness
A. Roth, T. Xie, **M. Nijim**, X. Qin
- Energy Efficient Scheduling for Parallel Applications running on heterogeneous clusters
Z. Zong, X. Qin, **M. Nijim**
- A Dynamic Voltage Scaling Algorithm for parallel Applications on Cluster
X.-j. Ruan, **M. Nijim**, X. Qin

REFERENCES

- 1. Dr. Xiao Qin**
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- 2. Subhasish Mazumdar**
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- 3. Dr. Dongwan Shin**
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