Syed S. Rizvi

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EDUCATION

Ph.D. student, Computer Engineering September 2006 - present

Computer Science and Engineering Department, University of Bridgeport, Bridgeport, CT Doctorate Dissertation: Multiuser Communications CGPA: 3.92

Ph.D. student, Computer Engineering June 2005 - August 2006

Electrical and Computer Engineering Department, Old Dominion University, Norfolk, VA Curriculum Focus: Parallel-Distributed and Logistic Simulation Systems CGPA: 3.92

M.S., Computer Engineering May 2005

Electrical and Computer Engineering Department, Old Dominion University, Norfolk, VA Curriculum Focus: Multiuser Communications CGPA: 3.92

EMPLOYMENT

Adjunct Faculty August 2006 – present

Computer Science and Engineering Department, University of Bridgeport, Bridgeport, CT

Currently I am working as an adjunct faculty in department of Computer Science and Engineering of University of Bridgeport where I teach the following courses:

- CPEG 471 "Data and Computer Communications"
- CPSC 590 "Parallel and Distributed Processing"

Senior Research Assistant January 2007 – present

Wireless and Mobile Communications (WMC) Lab, Computer Science and Engineering Department University of Bridgeport, Bridgeport, CT

- Designed and developed an efficient Transformation Matrix algorithm to reduce the asymptotic computational complexity of DS-CDMA multi-user receivers
- Performance optimization of wireless optimum multi-user receivers by improving the BER performance
- Deigned a mathematical model for reducing the null message transmission in parallel and distributed wide range simulation systems.
- Developed an efficient algorithm for improving the computing power of wireless multi-user receivers.
- Faulty node or links optimization and load-scalability in mesh networks.
- Designed and developed an efficient message routing algorithm for large multiprocessor parallel systems.
- Designed a new method for resource optimization in Wireless Sensor Networks.
- Developed a new probabilistic approach to reduce the handover time at MAC layer.

• Designed and implemented a new software based solution to avoid interference in RFID applications.

Research Assistant January 2006 – July 2006

Virginia Modeling, Analysis, and Simulation Center (VMASC) Electrical and Computer Engineering Department, Old Dominion University, Norfolk, VA

In this research work, I was working as one of the team members on a project called "*Integrating the joint operation feasibility tool*" (JOFT) with "*Joint Flow and Analysis System for Transportation*" (JFAST) for the Joint Forces Command (JFCOM). The JOFT is a model of logistics deployment and sustainment feasibility in the context of the effects base approach for Joint operations. On the other hand, JFAST is a more detailed force deployment and planning tool that can perform transportation feasibility analyses from the origin to the theatre of war, course of action analysis and evaluate what-if scenarios. I was mainly responsible to analyze the JOFT and the JFAST to design and develop a new architecture or framework for integrating these two simulation models.

Graduate Student Researcher August 2005 – July 2006

Virginia Modeling, Analysis, and Simulation Center (VMASC) Electrical and Computer Engineering Department, Old Dominion University, Norfolk, VA

- Research focused on the study of variety of serious games like realistic games (SOCOM, SIMS, NFL etc.) and fictional games (Grand Theft-Auto, Unreal tournament etc.) from social realism point of view.
- Involve in building a generic game model to achieve true social realism in serious games.
- I performed a comprehensive research for a performance analysis of both open source and commercial game engines like Delta3D, OGRE, Crystal Space, and JME. The technology and tools used in this research are like ODE and AERO (rigid body simulation), OpenAl for 3D audio, and OSG and FOX (3D graphic toolkits).

Graduate Teaching Assistant January 2004 – May 2005

Electrical and Computer Engineering Department, Old Dominion University, Norfolk, VA

- Responsible to conduct laboratory and discussion classes in Microcontroller and Computer Architecture courses.
- Supervised and assisted students with labs, course projects, and home works.
- Instructed undergraduate and graduate students, particularly on Motorola 68HC11 microprocessor, Axiom CME-11E9-EVBU emulation board, RTL, and assembly language.

Graduate Research Assistant April 2004 – December 2004

Electrical and Computer Engineering Department, Old Dominion University, Norfolk, VA

- Conducted research in a bioinformatics project called "*Cluster Based Searching of Multiple Protein Sequence Databases*" for Eastern Virginia Medical School (EVMS).
- I was mainly involved in the design and implementation of a Linux based cluster search engine for finding the desired proteins in input and outputs sequences from multiple databases.
- Worked on variety of tools and script languages like Perl and Shell script, Linux cluster, MPI, C/C++, and Cactus framework.

Academic Tutor August 2003 – May 2005

Student Support Services (SSS), Old Dominion University, Norfolk, VA

Responsible for teaching various junior and senior year undergraduate mathematics courses such as Linear Algebra, Vector Calculus, Complex Variables, Differential Equations, and Probability and Statistics.

Research Assistant August 2003 – December 2003

Computer Science department, Old Dominion University, Norfolk, VA

Involved in developing a pure peer to peer digital library project called "Free-Lib P2P Digital Library", that includes the implementation of a rich metadata-based search engine and publishing services. Performed fundamental research to address the issues involved in the design, implementation, deployment, and evaluation of a sustainable digital library that supports dynamic evolution of communities.

Tester and Analyst of SRMA June 2003 – July 2003

Technology Application Center (TAC), Old Dominion University, Norfolk, VA

Performed a comprehensive testing and analysis of a secure remote management appliance (SRMA)TM designed and developed by Engedi Technologies. Designed and developed a complete lab environment of CISCO routers for SRMA TM testing and analysis where I was responsible for configuring and installing CISCO routers such as modular access router (CISCO 1700) and VPN router (CISCO 7400) etc. Designed and developed the test-plan implementation, executing product level and system level test plan, selecting management tolls, identifying the problems, and validating the overall SRMA TM capabilities. Verified the implementation of network based applications such as simple net management protocol (SNMP) and common management information protocol (CMIP), centralized authentication servers (TACACS and RADIUS), and syslog servers.

SELECTED PUBLICATIONS

- Jalpa Bani and Syed S. Rizvi, "A New Dynamic Cache Flushing (DCF) Algorithm to Prevent Cache Timing Attack," ASEE Zone 1 Conference 2008, United State Military Academy, West Point, NY March 28 – 29.
- Syed S. Rizvi, Aasia Riasat, and Muhammad S. Rashid, "Analytical and Speedup Models for Performance Evaluation of a Generic Reconfigurable Coprocessor (RC) Architecture," ASEE Zone I Conference 2008, United State Military Academy, West Point, NY March 28 – 29.
- Syed S. Rizvi, Aasia Riasat, and Faraz Arain, "Innovative Glass-Box Approach: A Better Way to Enhance Learning of Complex Dynamic Systems," ASEE Zone I Conference 2008, United State Military Academy, West Point, NY March 28 – 29.
- 4. Auf Akhtar, **Syed S. Rizvi**, and Khaled M. Elleithy, "A Novel Approach of Using Data Guard for Disaster Recovery & Rolling Upgrades," *ASEE Zone I Conference 2008*, United State Military Academy, West Point, NY March 28 29.
- Syed S. Rizvi, Khaled M. Elleithy, and Aasia Riasat, "SNR Analysis of a Low-Complexity Wireless Multiuser Receiver for DS-CDMA Systems," *International Symposium on Wireless Pervasive Computing (ISWPC-08)* 2008, 7 – 9 May 2008 Santorini, Greece.
- Syed S. Rizvi, Aasia Riasat, and Muhammad S. Rashid, "A New Methodology for Efficient Traffic Management in ATM Networks for ATM Switching Systems," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD
- Syed S. Rizvi, Aasia Riasat, and Muhammad S. Rashid, "A New Methodology for an Efficient Congestion Control in High Performance Packet Switching Networks," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD
- Syed S. Rizvi, Aasia Riasat, and Muhammad S. Rashid, "Bit Error Rate (BER) Analysis of Synchronous DS-CDMA Multiuser Receivers," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD
- Syed S. Rizvi, Aasia Riasat, and Muhammad S. Rashid, "A New Efficient 3-Phase Algorithm for Performing Capacity Analysis of Mobile Ad Hoc Networks (MANET)," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD

- Ashish Vekaria and Syed S. Rizvi, "A New Efficient Routing Approach for Mobile Ad Hoc Networks (MANET)," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD
- Syed S. Rizvi and Varsha Edla, "REPU-TRUST Algorithm: An Efficient way for Minimizing the Malicious Behavior of Mobile Nodes in Ad Hoc Networks," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD
- Syed S. Rizvi, Aasia Riasat, and Muhammad S. Rashid, "A New Software Based Approach for Minimizing Interference in RFID Application," The 9th INFORMS Telecommunications Conference: Telecommunications Modeling, Policy, and Technology, March 27-29, 2008. Robert H. Smith School of Business, University of Maryland, College Park, MD.
- 13. **Syed S. Rizvi**, Khaled M. Elleithy, and Aasia Riasat, "Transformation Matrix System for Reducing the Computational Complexity of Wireless Multi-user Receivers for DS-CDMA Systems," 5th International Conference on Information Technology: New Generations ITNG 2008, April 7-9, 2008, Las Vegas, Nevada, USA.
- 14. **Syed S. Rizvi**, Khaled M. Elleithy, and Aasia Riasat, "A New Mathematical Model for Optimizing the Performance of Parallel and Discrete Event Simulation Systems," 11th Communications and Networking Simulation Symposium (CNS'08), Part of the 2008 Spring Simulation Multiconference (SpringSim'08). April 14-16, 2008. Crowne Plaza Ottawa, Ottawa, Ontario
- 15. Syed S. Rizvi, "An Efficient 3-Phase Algorithm for Capacity Analysis of Mobile Ad Hoc Networks (MANET)," *The 12th World Multi-Conference on Systemics, Cybernetics and Informatics (WMSCI 2008) jointly with The 14th International Conference on Information Systems Analysis and Synthesis (ISAS 2008)*, June 29th July 2nd, 2008 Orlando, Florida, USA
- Syed S. Rizvi, Khaled M. Elleithy, and Aasia Riasat, "Deterministic Formalization of the Processing Gain for Reducing MAI in Wireless Multiuser DS-CDMA Systems," 5th Annual IEEE Consumer Communications and Networking Conference (IEEE CCNC'2008), January 10 – 12, 2008 in Las Vegas, Nevada.
- 17. **Syed S. Rizvi**, Saroj Poudyal, Varsha Edla, and Ravi Nepal, "A Novel Approach for Creating Trust to Reduce Malicious Behavior in Mobile Ad Hoc Networks (MANET)," submitted in 3rd International Conference on emerging Networking Experiments and Technologies (CoNEXT), Columbia University, New York, NY, December 10 -13, 2007.
- Syed S. Rizvi, Syed N. Hyder, Aasia Riasat, "Performance Model for a Reconfigurable Coprocessor," accepted in *International Conference on Industrial Electronics, Technology & Automation (IETA 07)*, Bridgeport, CT, USA. December 3 - 12, 2007.
- Aasia Riasat, Syed S. Rizvi, Farheen Zehara, and Faraz Arain, "The Role of System Dynamics in Learning Environments," accepted in International Conference on Engineering Education, Instructional Technology, Assessment, and E-learning (EIAE 07), Bridgeport, CT, USA. December 3 -12, 2007.
- Syed S. Rizvi, Eslam M. Gebriel, and Aasia Riasat, "RFID: A New Software Based Solution to Avoid Interference," *International Conference on Systems, Computing Sciences and Software Engineering* (SCSS 07), Bridgeport, CT, USA. December 3 - 12, 2007.
- Syed S. Rizvi, Saroj Poudyal, Varsha Edla, and Ravi Nepal, "Reducing Malicious Behavior of Mobile Nodes in Ad Hoc Networks," International Conference on Telecommunications and Networking (TeNe 07), Bridgeport, CT, USA. December 3 - 12, 2007.
- Syed S. Rizvi, Aasia Riasat, Muhammad S. Rated, and Khaled M. Elleithy, "An Efficient Scheme for Traffic Management in ATM Networks," International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE 07), Bridgeport, CT, USA. December 3 - 12, 2007.
- 23. **Syed S. Rizvi**, Khushboo Patel, and Chaitali Patel, "Use of Self-Adaptive Methodology in Wireless Sensor Networks for Reducing the Energy Consumption", International Conference on Telecommunications and Networking (TeNe 07), Bridgeport, CT, USA. December 3 12, 2007.
- 24. **Syed S. Rizvi**, Aasia Riasat, Muhammad S. Rashid, and Khaled M. Elleithy, "Bandwidth Problem in High Performance Packet Switching Network," International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE 07), Bridgeport, CT, USA. December 3 12, 2007.

- 25. Aasia Riasat, **Syed S. Rizvi**, Faraz Arain, Rizwan M. Qureshi, "Dynamic Semantics of the Web: Useful Toll for the New Generation Agent-Based Software," *International Conference on Engineering Education, Instructional Technology, Assessment, and E-learning (EIAE 07)*, Bridgeport, CT, USA. December 3 12, 2007.
- Khurram M. Rajput, Khaled M. Elleithy, and Syed S. Rizvi, "A Novel Approach for Creating Consistent Trust and Cooperation (CTC) among Mobile Nodes of Ad Hoc Network," *International Conference on Telecommunications and Networking (TeNe 07)*, Bridgeport, CT, USA. December 3 -12, 2007.
- Ajay Shrestha, Khaled M. Elleithy, and Syed S. Rizvi, "Investigating the effects of Encoder Schemes, WFQ & SAD on VoIP QoS," International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering (CISSE 07), Bridgeport, CT, USA. December 3 - 12, 2007.
- Syed S. Rizvi, Khaled. M. Elleithy, and Aasia Riasat, "Transformation Matrix Algorithm for Reducing the Computational Complexity of Multiuser Receivers for DS-CDMA Wireless Systems," Wireless Telecommunication Symposium (WTS 2007), Pomona, California, April 26-28 2007.
- 29. Syed S. Rizvi, Khaled M. Elleithy, and Aasia Riasat, "The Impact of Reduced Computational Complexity of Multiuser Detectors on the Processing Gain in a Wireless DS-CDMA Multiuser System," Proceedings of the 2007 International Conference on Wireless Networks (ICWN'07). Part of the 2007 World Congress in Computer Science, Computer Engineering, & Applied Computing (WORLDCOMP'07), pp. 70 – 76, Las Vegas, Nevada, USA, June 25-28, 2007.
- Syed S. Rizvi, Khaled M. Elleithy, and Aasia Riasat, "Trees and Butterflies Barriers in Distributed Simulation System: A Better Approach to Improve Latency and the Processor Idle Time", *IEEE International Conference on Information and Emerging Technologies (ICIET-2007)*, pp. 1 – 6, July 06-07, 2007, Karachi, Pakistan.
- 31. Syed S. Rizvi, Khushboo Patel, and Chaitali Patel, and Khaled M. Elleithy, "An Approach to Reduce the Energy Consumption in Wireless Sensor Networks through Active Nodes Optimization," 2007 NEW ENGLAND AMERICAN SOCIETY FOR ENGINEERING EDUCATION CONFERENCE, April 20-21, 2007.
- 32. Syed S. Rizvi, Khaled M. Elleithy, and Aasia Riasat, "Use of Processing Gain to Suppress Multi Access Interference (MAI) in CDMA Based Multiuser Receiver," *International Wireless Communications and Mobile Computing Conference 2007 (IWCMC 2007)*, August 12-16, 2007, Honolulu, Hawaii
- Syed S. Rizvi, Aasia Riasat, "Use of Self-Adaptive Methodology in Wireless Sensor Networks for Reducing Energy Consumption," *IEEE International Conference on Information and Emerging Technologies (ICIET-2007)*, pp. 1 – 7, July 06-07, 2007, Karachi, Pakistan.
- Syed S. Rizvi, K. M. Elleithy, Aasia Riasat, "Minimizing the Null Message Exchange in Conservative Distributed Simulation," *International Joint Conferences on Computer, Information, and Systems Sciences, and Engineering, CISSE 2006*, pp. 443-448 ,December 4-14, Bridgeport CT, 2006.
- Lee A. Belfore, Saurav Mazumdar, and Syed S. Rizvi et al., "Integrating the joint operation feasibility tool with JFAST," Proceedings of the fall 2006 Simulation Interoperability Workshop, Orlando Fl, September 10-15 2006.

PAPERS UNDER REVIEW

- 1. **Syed S. Rizvi** and Aasia Riasat, "The Worst and Best case Capacity Analysis of Mobile Ad Hoc Networks (MANET) using a 3-Phase Algorithm," 2008 IEEE Sarnoff Symposium, April 28 30, 2008, Nassau Inn in Princeton, NJ, USA
- Jalpa Bani and Syed S. Rizvi, "A Secured Rijndael Implementation to Withstand Cache Timing Attack Using Dynamic Cache Flushing (DCF) Algorithm," 2008 IEEE Sarnoff Symposium, April 28 - 30, 2008, Nassau Inn in Princeton, NJ, USA
- 3. Jalpa Bani and **Syed S. Rizvi**, "A New Dynamic Cache Flushing (DCF) Algorithm for Preventing Cache Timing Attack," *Wireless Telecommunication Symposium (WTS 2008)*, Pomona, California, April 24-26 2008.
- Syed S. Rizvi, Aasia Riasat, "A Closed Form Expression for BER of Synchronous DS-CDMA Multiuser Detector," *Wireless Telecommunication Symposium (WTS 2008)*, Pomona, California, April 24-26 2008.

- 5. Syed S. Rizvi and Aasia Riasat, "Optimizing the Performance of NMA for Conservative Synchronization in Parallel and Discrete Event Simulation," *IEEE Symposium on Computers and Communications (ISCC'08)*, July 6 9, 2008, Marrakech, Morocco.
- 6. **Syed S. Rizvi** and Aasia Riasat, "An Efficient Single Bit Store and Forward (SBSF) Routing Algorithm for Mesh-Hypercube (M-H) Networks," *The 9th LCI International Conference on High Performance Clustered Computing*, National Center for Supercomputing Applications University of Illinois, Urbana, Illinois, USA, April 29-May 1, 2008.
- Syed S. Rizvi and Aasia Riasat, "Optimizing the Performance of Null Message Algorithm (NMA) for Large Parallel and Distributed Networks," *The 9th LCI International Conference on High Performance Clustered Computing*, National Center for Supercomputing Applications University of Illinois, Urbana, Illinois, USA, April 29-May 1, 2008.
- 8. **Syed S. Rizvi** and Aasia Riasat, "Performance Optimization of Large Parallel and Scalable Distributed Systems Using Trees and Butterflies Barriers with Optimistic Synchronization Algorithms," *The 9th LCI International Conference on High Performance Clustered Computing*, National Center for Supercomputing Applications University of Illinois, Urbana, Illinois, USA, April 29-May 1, 2008.
- Syed S. Rizvi, Usman M. Rana, and Khaled M. Elleithy," Active Scanning: A Better Approach to Reduce Handover Time at MAC Layer for Wireless Networks," 2nd IEEE International Broadband Wireless Access Workshop in Conjunction with 5th Annual IEEE Consumer Communications and Networking Conference (IEEE CCNC'2008), January 10 – 12, 2008 in Las Vegas, Nevada.
- 10. Syed S. Rizvi and Aasia Riasat, "A Mathematical Model for Evaluating the Performance of Multicast Systems," *International Multi Topic Conference (IMTIC '08), Mehran University of Engineering & Technology,* Pakistan, April 11-12 2008.
- 11. Aasia Riasat and **Syed S. Rizvi**, "Deriving Complex Relationship between the Semantic and the Dynamic Web using Ontology Engineering," *International Multi Topic Conference (IMTIC '08), Mehran University of Engineering & Technology*, Pakistan, April 11-12 2008.
- Syed S. Rizvi, Aasia Riasat, and Khaled M. Elleithy, "A Mathematical Model for Reducing Handover Time at MAC Layer for Wireless Networks," 9th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks (WOWMOM 2008), New Port Beach, CA, USA, 23 – 27 June, 2008.

CERTIFICATIONS

- UNIX System Administration Certification, July 1999, DEC Training Center
- Windows Network Administration Certification, July 1997, DEC Training Center
- Diploma of Computer Science, September 1996, AT&T Education Center

AFFILIATIONS

• Student Member of IEEE, IEEE Computer Society, and IEEE Communication Society

<u>Skills</u>

Research Skills

Conducted research, designed, implemented and compared algorithms in the areas of multiuser communications, multipath signals detection, multi-access interference estimation, computational complexity and combinatorial optimization of multiuser receivers, peer-to-peer networking, and reconfigurable coprocessor and FPGA based architectures.

Technical Expertise

Designed and Modeling: UML, Rational Rose Simulation Tools: NS-2 network simulator, OPNET Languages: C, C++, Java, Perl, Assembly, VHDL Scripts Writing: UNIX, Linux, CGI Development Tools: Visual Basic Database: ORACLE, My SQL Server Networking Protocols: OSPF, IP, NFS, DNS, TCP, DHCP, SMTP, ATM, UDP, SSH, HTTP, etc. System Administration: Configured and maintained UNIX servers and workstations, IBM AIX 4.3.3 and 5.1, and windows servers, PCs, and Web Servers.

. Verbal Skills

Strong teaching skills span from educating students to training new teaching assistants. Strong presentation, communication, and organization skills. Spoken and written English language.

References

Dr. Khaled M. Elleithy

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Dr. Lee A. Belfore II

Assistant Professor Department of Electrical and Computer Engineering Old Dominion University Room 1115, Electrical and Computer Science Building Norfolk, VA 23529 Phone: (757) 683-3746 E-mail: <u>lbelfore@odu.edu</u>