

Shankar M. Banik

Department of Mathematics and Computer Science
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Permanent Resident of the United States of America

Research Interests

Computer Networks, Collaborative Applications, Peer-to-peer Systems, Multimedia and Mobile Systems.

Education

Ph. D in Computer Science (GPA: 4.0/4.0) **May 2006**

University of Oklahoma, Norman, Oklahoma
Dissertation: Protocols for Collaborative Applications on Overlay Networks
Advisor: Dr. Sridhar Radhakrishnan

M.S. (Thesis) in Computer Science (GPA: 3.9/4.0) **May 2001**

University of Oklahoma, Norman, Oklahoma
Thesis: Energy-Efficient Transaction Management for Real-Time Mobile Databases
in Ad-Hoc Network Environment
Advisor: Dr. Le Gruenwald

B.Tech. (Honors) in Computer Science and Engineering **May 1997**

Indian Institute of Technology (IIT), Kharagpur, India
Thesis: Verification of Data Paths of Sequential Circuits with Respect to their VHDL
Behavioral Specifications
Advisor: Dr. Dipankar Sarkar

Awards and Honors

- Computing Research Association (CRA) Academic Careers Workshop Scholarship (2006).
- Outstanding Graduate Teaching Assistant Award, University of Oklahoma (2005).
- Robberson Conference Presentation Travel Grant, Graduate College, University of Oklahoma (2004).
- Conference and Creative Exhibition Grant, Graduate Student Senate, University of Oklahoma (2004).
- Ranked 16th among 150000 students in the Secondary School Certificate Examination, Dhaka, Bangladesh (1990).

Professional Experience

Assistant Professor

August 2006 - Present

Department of Mathematics and Computer Science
The Citadel

- Offered Courses: Operating Systems, Privacy and Security Issues, Microcomputer Applications.

Instructor

January 2005 – May 2006

School of Computer Science
University of Oklahoma, Norman, OK

- Offered Courses: Data Structures, Programming for Non-majors.

Graduate Teaching Assistant

January 2003 – December 2004

School of Computer Science
University of Oklahoma, Norman, OK

- Assisted Courses: Introduction to Programming, Scientific Computing, Data Networks.

Graduate Research Assistant

September 1999 – December 2002

School of Computer Science
University of Oklahoma, Norman, OK

- Worked on a research project “*Multicast Routing with Delay and Delay Variation Constraints*”, funded by *School of Computer Science*. Project work involved reviewing and analyzing existing multicast routing algorithm for delay and delay variation constraints, designing an efficient algorithm and simulating the existing and proposed algorithms for performance evaluation.
- Worked on a research project “*Duplicating Delays in Network Multicasting*”, funded by *Oak Ridge National Laboratory*. Project work involved defining the problem formally, designing the algorithm and simulating the model for validation.
- Worked on a research project “*Energy Efficient Transaction Management for Mobile and Real Time Databases in Ad-hoc Networks*,” funded by *National Science Foundation*. Project work involved defining the architecture for the environment, identifying the issues, developing techniques for Transaction Management and simulating the proposed techniques to evaluate the performance.

Assistant IT Analyst

October 1997 – August 1999

British American Tobacco (BAT), Bangladesh

- Developed “Technical Training Information Systems” using MS Access and Visual Basic for storing the training information of the employees in a relational database and generating different reports.
- Led a Project Team for developing a Supply Chain Software using Visual Basic and Oracle on Windows NT. Tasks involved identifying requirements and specifications of the system, developing, testing, conducting training and ensuring smooth operation of the system.
- Was a key member in the implementation team of “Tetra CS/3” which is the ERP (Enterprise Resource Planning) Software used by BAT Bangladesh.

Publications

Journals:

1. Shankar M Banik, Sridhar Radhakrishnan, Venkatesh Sarangan, Chandra N Sekharan, "Implementation of Distributed Floor Control Protocols on Overlay Networks", **IEEE Transactions on Parallel and Distributed Systems**, 2006. (under review)
2. Shankar M Banik, Sridhar Radhakrishnan, Chandra N Sekharan, "Multicast Routing with Delay and Delay Variation Constraints for Collaborative Applications on Overlay Networks", **IEEE Transactions on Parallel and Distributed Systems**, 2006. (accepted for publication)
3. Chandra N Sekharan, Shankar M Banik, Sridhar Radhakrishnan, "On the Heterogeneous Postal Delivery Model for Multicasting", **Algorithmica**, 2005. (under review)
4. Le Gruenwald, Shankar M Banik, Chuo N Lau, Matilde Montealegre, "Managing Real-Time Database Transactions in Mobile Ad-Hoc Networks", **International Journal on Distributed and Parallel Databases**, 2005.

Conference Papers and Reports:

1. Shankar M Banik, Sridhar Radhakrishnan, Tao Zheng, Chandra N Sekharan, "Distributed Floor Control Protocols for Computer Collaborative Applications on Overlay Networks", **1st IEEE International Conference on Collaborative Computing: Networking, Applications and Worksharing (CollaborateCom 2005)**, San Jose, CA, December 2005.
2. Shankar M Banik, Sridhar Radhakrishnan, Chandra N Sekharan, "Multicast Routing with Delay and Delay Variation Constraints for Multimedia Communications", **7th IEEE International Conference on High Speed Networks and Multimedia Communications (HSNMC 2004)**, Toulouse, France, June 2004.
3. Chandra N Sekharan, Shankar M Banik, Sridhar Radhakrishnan, Nageswara S. V. Rao, "Duplicating Delays in Network Multicasting : Model, Algorithm and Validation", **2nd IASTED International Conference on Communications, Internet and Information Technology, (CIIT 2003)**, Scottsdale, Arizona, November 2003.
5. Shankar M Banik, Sridhar Radhakrishnan, "Multicasting Needs for Grid Computing", **Oklahoma Supercomputing Symposium 2003** (Poster Paper), University of Oklahoma, September 2003.
6. Le Gruenwald, Shankar M Banik, "A Power-Aware Technique to Manage Real-Time Database Transactions in Mobile Ad-Hoc Networks," **4th International Workshop on Mobility in Database and Distributed Systems, part of the International Conference on Database and EXpert systems Applications (DEXA 2001)**, Germany, September 2001.
7. Le Gruenwald, Shankar M Banik, "Energy Efficient Transaction Management for Real Time Mobile Databases in Ad-hoc Network Environments", **International Conference on Mobile Data Management (MDM 2001)**, Hong Kong, January 2001.

8. Shankar M Banik, “Energy Efficient Transaction Management for Real-Time Mobile Databases in Ad-Hoc Network Environment”, Master’s Thesis, School of Computer Science, University of Oklahoma, 2001.
9. Shankar M Banik, “Verification of Data Paths of Sequential Circuits with Respect to their VHDL Behavioral Specification”, B. Tech (Hons.) Thesis, Department of Computer Science and Engineering, Indian Institute of Technology (IIT), Kharagpur, India, 1997.

Professional Activities and Leadership

- Co-founder and Executive Council Member, Computer Science Graduate Student Association, University of Oklahoma (2004-2006).
- Program Committee Member, 1st Annual Computer Science Research Conference, University of Oklahoma, April 2005.
- Senator, Graduate Student Senate, University of Oklahoma (2004-2005).
- Member, Association for Computing Machinery.
- Member, IEEE.
- Member, Engineers’ Institution of Bangladesh.
- General Secretary, Bangladesh Student Association, IIT, Kharagpur (1995-96).