

# **Shakil Akhtar**

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## **Objective**

Obtain an Executive Level Educational Administration Position at an Internationally Recognized University

### **CV Highlights:**

#### **Administrative Roles**

Chair, IT Department, Clayton State University (2007-Present)

Interim Dean, UAE University (2002-03)

Program Coordinator (Chair), Network Engineering, UAE University (2003-05)

Acting Chair, CS Department, Central Michigan University (1996)

Graduate Program Chair, Central Michigan University (1995-2000)

Numerous committees at department, college and university levels

#### **Major Accomplishments**

Played an important role in start of a new game-based CS program at Clayton State University (Pending approval by BOR)

Designed, developed and partially implemented several aspects of seven new IT programs at UAE University

Designed, developed and implemented an IT major within CS Department at Central Michigan University

Enhanced the graduate program in CS at Central Michigan University bringing The enrollments from teens to over 100 within 3 years

#### **Research**

Books/book chapters including a textbook: 4

Journal articles: 16

Papers in proceedings of international conferences: 32

Technical reports: 12

Funded US/International grants and research proposals: 29

Invited talks/addresses: 24

Conference presentations: 30

Journal editorial boards (including one editor-in-chief): 16

Conference committees and textbook/journal reviews: 50+

Years research experience at internationally reputed telecom company: 2 Years

#### **Teaching**

Academic program developments in IT, CS and Engineering: 10+

Laboratory developments in networking, data communications and computers: 8

Ph.D. Dissertations (supervision/examiner): 2  
MS Thesis/Plan B Supervisions: 27  
Independent studies/student senior projects: 50+  
Global teaching experience at undergraduate and graduate levels: 20+ Years

**Affiliated with four professional organizations (IEEE, ACM, SCS and ISCA)  
Listed in 2005-06 edition of International Who's Who of Professionals**

## 1. Personal Information

Picture available at: <http://cims.clayton.edu/sakhtar>  
Date of Birth March 12, 1957  
Place of Birth Karachi, Pakistan  
Nationality USA  
Marital Status Married; Three children

## 2. Education

Ph. D., Computer Engineering, Wayne State University, October 1986.  
*Thesis: Performance Models of Medium-Access Protocols in Local Area Networks.*

M.S., Electrical Engineering, University of Petroleum and Minerals, Dhahran, Saudi Arabia,  
June 1982.  
*Thesis: Software Reliability Modeling and Evaluation via Markov and Semi-Markov Processes.*

B.S., (with Honors) Electrical Engineering, University of Peshawar, Peshawar, Pakistan, 1980.  
*Senior Project: Video Recording Techniques in Pakistan Television Centers.*  
(Received Peshawar University Merit Scholarship during three years of studies)

## 3. Experience

**Professor and Head**, IT Department, Clayton State University  
July 2007-Present.

**Responsibilities:** Scheduling, SACS/ABET accreditation and assessment planning, faculty hiring,  
Evaluation and mentoring, budget management, curriculum planning and development

**Professor**, College of Information Technology, UAE University.  
September 2002-June 2007.

**Program Coordinator (2003-05) with departmental responsibilities:** program course  
development, lab planning, study plan revision/implementation, program faculty evaluation/hiring  
recommendations.

**Professor and Acting Dean**, College of Information Technology, UAE University.  
September 2002 to August 2003.

**College responsibilities:** accreditation planning, college development planning including college annual  
report. Curriculum development to support seven IT programs. Faculty and staff evaluation/hiring  
recommendations, budget planning, course scheduling, teaching assignments, committee supervision.

**Member of Technical Staff**, Lucent Technologies, Inc., AMPS/PCS Switch Performance and  
Applications, Naperville, Illinois.  
December 2000 to August 2002.

**Professor**, Department of Computer Science, Central Michigan University.  
August 1995 to December 2000.

**Acting Chair**, Department of Computer Science, Central Michigan University.  
Spring 1996.

**Departmental responsibilities:** course scheduling, respond to faculty/student concerns, hold department meetings, department committee supervision, communicate college/university policies to the department, provide promotion/tenure review for faculty and staff, control the operation of departmental computer center.

**College/university responsibilities:** represent department at the Dean and Provost level, communicate department concerns to the Dean, update Dean about departmental equipment needs, participate in the Dean Advisory Committee.

**Visiting Scholar**, Advanced Computer Architecture Laboratory,  
University of Michigan, Ann Arbor  
On sabbatical from Central Michigan University during Fall 1995.

#### 4. Other Relevant Experience

Associate Professor, Department of Computer Science, Central Michigan University.  
August 1991 to July 1995.

Associate Professor, Department of Computer Engineering, King Fahd University of  
Petroleum and Minerals, Dhahran, Saudi Arabia.  
August 1992 to July 1993 (On leave from CMU).

Assistant Professor, Department of Computer Science, Central Michigan University.  
August 1988 to July 1991.

Assistant Professor, Department of Computer Science and Engineering, University of Toledo.  
October 1986 to August 1988.

Instructor, Department of Computer Science and Engineering, University of Toledo.  
January 1986 to September 1986.

Research Assistant, Department of Electrical and Computer Engineering, Wayne State  
University.

September 1983 to December 1985.

Consultant, Department of Computer Science, Wayne State University.

January 1983 to August 1983.

Instructor, Department of Computer Science, University of Windsor, Canada.

January 1983 to December 1985.

Research Assistant, Department of Electrical Engineering, University of Petroleum and  
Minerals, Dhahran, Saudi Arabia.

September 1980 to August 1982.

#### 5. Reviews

##### **Books:**

1. "Computer Architecture: Software Aspects, Coding and Hardware,"  
Brooks/Cole Publishers, June 2000.

2. "A Complete Book of C Programming,"  
Prentice Hall, 1999
3. "Pipelined and Parallel Computer Architecture,"  
Harper Collins Publisher, 1994
4. "Assembly Language Programming for the Vax 11,"  
By M.H. Pressman, Scott/Jones Publisher, 1992
5. "Computer Design and Architecture (Chapters 1-4),"  
By S.G. Shiva, Harper Collins Publishers, 1991

**Journals:**

1. IEEE Communications Letters (2006-current)
2. Journal of Independent Studies and Research (2005-current)
3. Member, Editorial Board, International Journal of Computer and Information Science (2005-current)
4. Editor-in-Chief, ANSI Information Technology Journal (2004-current)
5. International Journal of Computers and Technology (2004)
6. Encyclopedia of Multimedia Technology and Networking (2004)
7. IEEE Transactions on Reliability (1992-2001)
8. International Journal of Parallel and Distributed Systems and Networks (1999-2001)
9. International Journal of Modeling and Simulation (1999-2001)
10. Parallel and Distributed Computing Systems (2000)
11. IEEE Transactions on Computers (1992)
12. IEEE Transactions on Communications (1989)
13. International Journal of Modeling and Simulation (1990)
14. IEEE Computer magazine (1989, 1990 and 1991)
15. International Journal of Computers and Their Applications (1996)
16. Journal of Quality in Maintenance Engineering (1995)

**Miscellaneous:**

1. CS and IS Curriculums, College of Computer Sciences and Information Technology, King Faisal University, Saudi Arabia (May 2004)
2. Promotion folders for faculty members at Indiana University Purdue University at Indianapolis (1995), Princess Sumaya University of Science and Technology, Jordan (1998), and University of Sharjah, UAE (2005)

## 6. Invited Talks and Special Presentations

**Keynote Address**, "An Overview of Emerging Technologies," 2<sup>nd</sup> IEEE International Conference on Emerging Technologies, NWFP University of Engineering and Technology, Peshawar, Pakistan, November 13-14, 2006.

**Panelist**, "Next Generation Wireless Technologies," 4<sup>th</sup> International Conference on Computer Science and its Applications, National University, San Diego, CA, June 27<sup>th</sup>-29<sup>th</sup>, 2006.

**Keynote Address**, "Education Challenges in Wireless Communication," International Conference On Computer Science and its Applications, National University, San Diego, CA, June 27<sup>th</sup>-30<sup>th</sup>, 2005.

**Panelist**, "New Trends in Wireless Communication," International Conference on Computer Science and its Applications, National University, San Diego, CA, June 27<sup>th</sup>-30<sup>th</sup>, 2005.

**Tutorial Presentation**, “Performance Modeling and Radio Resource Management Techniques for Wireless Cellular Networks,” Second IFIP International Conference on Wireless and Optical Communications Networks, Dubai, UAE, March 6-8 2005. (Co-presenter: N. Nasser)

**Tutorial Presentation**, “Simulation and Modeling of Communication Networks,” National Conference on Emerging Technologies, SZABIST, Karachi, Pakistan, December 18-19, 2005.

**Panelist**, “The Future of IT Education and Research,” International Workshop on Frontiers of Information Technology, Islamabad, Pakistan, Dec 23-24, 2003.

**Invited Talk**, "Network Performance and Simulation," SZABIST, Karachi, Pakistan, February 19<sup>th</sup> 2003.

**Tutorial Presentation**, "Performance Modeling and Simulation of Mobile Networks," ACIS 2<sup>nd</sup> International Conference on Software Engineering, Artificial Intelligence, Networking & Parallel/Distributed Computing, Nagoya, Japan, August 2001.

**Invited Talk**, "Performance Modeling and Simulation of Computer Networks," CS Dept., Depaul University, October 2001.

**Group Presentation**, "Performance Modeling and Simulation of Computer Networks," AMPS/PCS Switch Performance and Applications, Switching Solutions Group, Lucent Technologies, August 2001.

**Invited Talk**, “Performance of Multimedia Data in Mobile Systems,” Sarnoff Corporation, NJ, August 2000.

**Invited Talk**, “Performance of Mobile Multimedia Communication In Hybrid Networks,” Computer Science Department, West Virginia University Institute of Technology, April 2000.

**Invited Talk**, “Performance of Mobile Multimedia Communication In Hybrid Networks,” Computer Science Department, Ball State University, March 2000.

**Invited Talk**, “Teaching Network Performance and Simulation,” MSU/NSF Sponsored Network Workshop, July/August 1998.

**Panelist**, “The Networks Course: Old Problems, New Solutions”, 30<sup>th</sup> SIGCSE Technical Symposium on Computer Science Education, March 24-28, 1999, New Orleans, Louisiana.  
Moderator: Bob Roos, Co-panelists: Nizar Al-Holou et. al.

**Panelist**, “Teaching Computer Networks Using OPNET”, OPNETWORK-98, Washington, DC, June 1998.

**Invited Talk**, “Performance Evaluation of High Speed Computer Networks Through Simulation,” Lucent Technologies, November 1997.

**Invited talk**, “Introduction to Computer Networks,” Department of Computer Engineering, National University of Sciences and Technology, Rawalpindi, Pakistan, December 1996.

**Invited talk**, “Simulation of Computer Networks,” Department of Computer Engineering, National University of Sciences and Technology, Rawalpindi, Pakistan, December 1996.

**Invited talk**, “Introduction to Computer Networks,” Department of Computer Engineering, National University of Sciences and Technology, Rawalpindi, Pakistan, December 1996.

**Invited talk**, “Simulation of Computer Networks,” Department of Computer Engineering, National University of Sciences and Technology, Rawalpindi, Pakistan, December 1996.

**Invited talk**, "Reliability of Multiple Bus Multiprocessor Systems," Department of Computer Engineering, KFUPM, December 1992.

**Invited talk**, "LAN Laboratory Using PT68K2 Systems," Department of Computer and Information Systems, Georgia State University, February 1991.

## 7. Recent Conference Committees

**Workshop Co-Chair**, 2<sup>nd</sup> International Workshop on Web-Based Learning: Innovation and Challenges (WeLearn-2007), in conjunction with 2<sup>nd</sup> International Conference on Interactive Mobile and Computer Aided Learning, Princess Sumaya University of Technology, Amman, Jordan, April 17-20, 2007.

**Program Co-Chair**, 4<sup>th</sup> International Workshop on Frontiers of Information Technology, to be held December 20-21, 2006.

**Workshop Co-Chair**, International Workshop on Databases for Mobile Communications System, in conjunction with 4<sup>th</sup> ACS/IEEE International Conference on Computer Systems and Applications, Dubai/Sharjah, March 8-10, 2006.

### **Session Chair for**

Digital Signal Processing, 2<sup>nd</sup> IEEE International Conference on Emerging Technologies, NWFP University of Engineering and Technology, Peshawar, Pakistan, November 13-14, 2006.

"Communications, Networking and Information Technology," Ninth World Multi-Conference on Systematics, Cybernetics and Informatics, Orlando, Florida, July 10-13, 2005.

International Conference on Computers and Their Applications, New Orleans, LA, March 16-18, 2005

"Modeling Techniques," Applied Telecommunication Symposium, Orlando, Florida, March 2003.

"Modeling and Performance," 1998 Symposium on Performance Evaluation of Computer and Telecommunication Systems, Reno, Nevada, July 1998.

International Conference on Computing and Information, Waterloo, Ontario, June 21-22, 1996

### **Technical Program Committee Member**

9<sup>th</sup> Communications and Networking Simulation Symposium, April 2006.

3<sup>rd</sup> International Conference on Software Engineering Research, Management & Applications. August 2005.

1<sup>st</sup> International Conference on Information and Communication Technologies, August 2005.

4<sup>th</sup> Annual International Conference on Computer and Information Science, July 2005.

Spring Simulation Multiconference, 2005.

International Workshop on Frontiers of Information Technology (1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup>), Islamabad, Pakistan, 2003, 2004, and 2005.

IEEE International Multitopic Conference, December 2004.

Optical Networking, International Conference on Communications, Anchorage, Alaska, May 2003.

2<sup>nd</sup> ACIS Annual International Conference on Computers and Information Sciences, Korea, August 2002.

ACIS 2<sup>nd</sup> International Conference on Software Engineering, Artificial Intelligence, Networking & Parallel/Distributed Computing, Nagoya, Japan, August 2001.

Parallel and Distributed Computing Systems, August 2000.

Advanced Simulation Technologies Conference, March 2000.

Applied Telecommunications Symposium, March 2000, March 2003, March 2004.

Symposium on Performance Evaluation of Computer and Telecommunication Systems, July

1998, July 1999, July 2000.  
 Summer Computer Simulation Conference, 1999  
 Global Communications Conference (GLOBECOM), 1999  
 Computer Science Conference, 1990, 1991, 1992  
 International Symposium on Computer Architecture, 1992  
 Conference on Computer Communications, INFOCOM, 1991  
 Symposium on Fault Tolerant Computing Systems, (FTCS), 1991

## 8. Teaching

### Course Taught During 2003-08 (Reverse chronological order)

At Clayton State University (Since Fall 07)

| Semester  | Course #  | Section # | Course Name                        | # of Students |
|-----------|-----------|-----------|------------------------------------|---------------|
| Spring 09 | ITFN 1501 | 01 and 02 | Found of NW/Security               | 18            |
| Spring 09 | ITMM 3423 | 01        | Security for E-Commerce            | 10            |
| Spring 09 | ITFN 2001 | 01        | Prof Dev Seminar                   | 30            |
| Spring 09 | ITFN 4003 | 01        | Portfolio Development/Presentation | 10            |
| Fall 08   | ITNW 4501 | 01        | NW Planning & Design               | 12            |
| Spring 08 | ITFN 1501 | 02        | Found of NW/Security               | 9             |
| Fall 07   | ITFN 1501 | 01        | Found of NW/Security               | 2             |

At UAE University (2002-07)

| Semester  | Course #   | Section # | Course Name      | # of Students |
|-----------|------------|-----------|------------------|---------------|
| Fall 06   | SECB 411   | 51        | FT & Reliability | 14            |
| Fall 06   | SECB 411   | 52        | FT & Reliability | 11            |
| Fall 06   | SECB 411   | 01        | FT & Reliability | 16            |
| Fall 06   | Internship |           |                  | 5             |
| Spring 06 | NEBP 410   | 51        | Wide Area NW     | 22            |
| Spring 06 | NEBP 410   | 52        | Wide Area NW     | 24            |
| Spring 06 | NEBP 410   | 54        | Wide Area NW     | 19            |
| Spring 06 | NEBP 410   | 01        | Wide Area NW     | 8             |

|              |            |                    |                                |            |
|--------------|------------|--------------------|--------------------------------|------------|
| Fall 05      | SECB 411   | 52                 | FT & Reliability               | 25         |
| Fall 05      | SECB 411   | 01                 | FT & Reliability               | 21         |
| Fall 05      | ITBP 210   | 52                 | Comm & NW                      | 21         |
| Fall 05      | ITBP 310   | 52                 | NW Prot & SW                   | 25         |
| Spring 05    | ITBP 210   | 53                 | Comm & NW                      | 20         |
| Spring 05    | ITBP 210   | 02                 | Comm & NW                      | 9          |
| Spring 05    | ITBP 310   | 52                 | NW Prot & SW                   | 25         |
| Spring 05    | Internship |                    |                                | 5          |
| Fall 04      | ITBP 460   | 51                 | Prof Resp III                  | 33         |
| Fall 04      | ITBP 460   | 52                 | Prof Resp III                  | 30         |
| Fall 04      | ITBP 460   | 53                 | Prof Resp III                  | 34         |
| Fall 04      | ITBP 460   | 01                 | Prof Resp III                  | 26         |
| Fall 04      | ITBP 210   | 53                 | Comm & NW                      | 23         |
| Spring 04    | ITBP 210   | 52                 | Comm & NW                      | 19         |
| Spring 04    | ITBP 210   | 54                 | Comm & NW                      | 20         |
| Spring 04    | Admin      |                    |                                |            |
| Fall 03      | ITBP 310   | 54                 | NW Prot & SW                   | 20         |
| Fall 03      | Admin      |                    |                                |            |
| Summer 03    | ITBP 210   | 51                 | Comm & NW                      | 21         |
| Summer 03    | ITBP 210   | 01                 | Comm & NW                      | 20         |
| Summer 03    | Admin      |                    |                                |            |
| Fall 02      | ITBP 210   | 51                 | Comm & NW                      | 20         |
| Fall 02      | Admin      |                    |                                |            |
| <b>TOTAL</b> |            | <b>25 sections</b> | <b>Seven different courses</b> | <b>536</b> |

### Summary of Teaching

#### *Undergraduate Level:*

Computer Networks (since 1986)

Introduced a laboratory for the course at three universities

Used a self co-authored textbook in course since 2002

Secured NSF lab development grant and successfully implemented it

Local Area Networks (since 1988)

Data Communications Fundamentals (since 1988)

Computer Systems (since 2000)

Computer Architecture and Organization (since 1986)

Digital Systems Design (since 1983)

Introduced a laboratory for the course at two universities

Programming Languages: C++, Java, Visual Basic etc. (since 1986)

Assembly Language Programming (since 1990)

Computer Hardware Configuration and Installation

Developed the course with lab involving PC configuration and repair for the IT majors

Wide Area Networks (since 2005)

Network Protocols and Software (since 2000)  
System Reliability and Fault Tolerance (since 2005)

*Graduate Level:*

Systems Performance Modeling and Simulation (since 1999)  
Computer Networks (since 1986)  
Introduced a set of network labs based on the network simulation package  
“Opnet”, which is commonly used in industry to model computer networks  
Computer Communications (since 1992)  
Computer Architecture and Parallel Processing (since 1987)

**Offered short courses for industry participants on:**

Data Communications and Computer Networks, March 1993  
PC Networking, February 1993  
PC Hardware and Maintenance, March 1993  
Unix Fundamentals, September 2000  
Fundamentals of Network Programming, December 2000  
Computer Literacy and Basic Productivity Tools, 2000-2005

## 9. Students Supervised

Aslam Pervaiz Memon, Ph.D. Candidate (expected completion 2009), Szabist, Karachi, Pakistan  
*Grid Architecture for Collaborative R&D*

Senior Exhibition Projects on WLAN Performance, CIT, UAE University  
Spring 2006

Internship Projects on Network Modeling and Simulation, CIT, UAE University  
Spring 2006, Spring 2005

Sooraj Bopanna, M.S., 2000, CMU  
*Plan B Paper: A Modified CDPD Authentication Mechanism*

Piyush Bhatt, M.S., 2000, CMU. (Committee Chair)  
*Plan A Thesis: Hierarchical Performance Modeling System*

Rahul Chatterjee, M.S., 2000, CMU.  
*Plan B Paper: SMTP Mailer Using Visual Basic*

Ling Chen, M.S., 1999, CMU.  
*Plan B Paper: Simulation of FIFO Queues in a Bank; Online Library Database System*

Yei Han, M.S., 1999, CMU.  
*Plan B Paper: Order Management System*

Mark D. Strandkov, M.S., 1999, CMU.  
*Plan B Paper: Identifying Network Users Without Authentication In A Partially Dynamic Networked Environment*

Zhongguo Li, M.S., 1999, CMU.  
*Plan B Paper: MktView: An Online Java Implementation to Chart Stock Prices*

Xuedong Din. M.S., 1999, CMU. (Committee member)  
*Plan A Thesis: A Client/Server model to Animate Fluid Flows*

Yonggang Ruan, M.S., 1998, CMU.

*Plan B Paper: Monitoring Network Performance Using Traceroute and CGI Programs*

Pramod P. Bangalore, M.S., 1998, CMU.

*Plan B Paper: Implementation of Network Authentication Based on Diffie-Hellman Key Exchange and RSA Algorithm*

Pradeep A. Bhole, M.S., 1998, CMU.

*Plan B Paper: Software to Implement the Video Rental System*

Sin Yan Chiu, M.S., 1998, CMU.

*Plan B Paper: A Computer Model of Water Demand System Using Visual Basic*

Hui Wang, M.S., 1998, CMU.

*Plan B Paper: Building User Interface With Java*

Jayashree K. Rugi., M.S., 1997, CMU.

*Plan B Paper: Transmission Control Protocol (TCP): An Implementation*

Subramanyam Kalyanasundaram, M.S., 1997, CMU.

*Plan B Paper: Implementation of 3-Way Talk for Windows*

Baiqing Wang, M.S., 1997, CMU.

*Plan B Paper: Library Database System With Visual C++*

Juan Gamez, M.S., 1997, CMU. (Committee member)

*Plan A Thesis: Trace Driven Simulation of Dynamic Branch Prediction Schemes*

Jun Tang, M.S., 1996, CMU. (Co-advised with S.N.J. Murthy)

*Plan A Thesis: Synchronizing Properties of Multimedia Systems*

Youngchun Kim, M.S., 1995, CMU.

*Plan B Project: Fault Tolerant Routing for Shufflenet Network Under Single Channel Failures*

Tien-Lung Chou, M.S., 1995, CMU.

*Plan B Project: Staircase and Grid-Based Multichannel Networks With Unidirectional NIUs*

Co-advised (with E. Lloyd) a group of undergraduate students for participation in Undergraduate Research Exposition, Spring 1994.

*Project: Design and Implementation of a Digital Computer*

Abed Ali, M.S., KFUPM, 1993. (Committee member)

*Thesis: Optimal Genetic Algorithm-based Solutions for Multichannel LANS*

Sudhindra S. Acharya, M.S., 1991, CMU.

*Plan B Project: Implementation of LAN Protocols Using 68k Based Processors*

Anthony G. Papadimitriou, M.S., 1990, CMU.

*Plan B Project: A Motorola 6809 Microprocessor Emulator*

Milton M. Mah, M.S., 1990, CMU.

*Plan B Project: A Database Management System: Microcomputer Hardware and Peripherals*

Suhail Khan, M.S., 1990, CMU.

*Plan B Project: Pascal to C Code Converter*

Walid Nassereddine, M.S., 1989, University of Toledo.

*Thesis: Simulation and Animation of a Token Passing Bus Protocol Using SIMSCRIPT II.5*

*In addition, supervised independent studies at undergraduate and graduate level. Some topics are*

“Wireless Web Access Using XML and Dynamic Scripting,” Harikumar Chandrasekaran, 2002

“Security in Wireless LANs,” Sooraj Bopanna, 2002

“Web Based Simulation of Shortest Path Algorithm,” Mei Li, April 2000.

“Usage of TCP/IP and UDP/IP under Solaris/Unix,” Wei Dai, April 2000.

“Telecommunications Management Networks (TMN): Theory, Concepts And Practice With Emphasis On Embedded TMN Agents,” Gajendra S. Shete, December 1999.

“Implementation of Java Based Chat System,” Veeraraghavan S. Naranammalpuram, August 1999.

“Java Implementations of Nearest Neighbor Search and Chat Server,” Ling Chen, August 1999.

“Widget Factory Sub-Assembly Simulation,” David A. Helmstetter, August 1999.

“Java Based Online Test System,” Zhongguo Li, July 1999.

*Also, supervised several BS senior projects at KFUPM during 1992-93*

## 10. Research Interests

Computer Network Performance and Reliability  
Data Communications and Computer Networks  
Performance Modeling and Simulation  
Computer Architecture  
Fault Tolerant Computing  
Parallel Processing

## 11. Books/Book Chapters

1. “Wireless LAN Performance,” in Handbook of Wireless Local Area Networks: Applications, Technology, Security, and Standards, pages 25-49, CRC Press, 2005.  
(Edited by M. Ilyas and S. Ahson)
2. “2G-4G Networks: Evolution of Technologies, Standards, and Deployment,” in Encyclopedia of Multimedia Technology and Networking, Ideas Group Publisher, pages 964-973, May 2005.  
(Edited by Margherita Pagani)
3. “Networks for Computer Scientists and Engineers,” Oxford University Press, 2002.  
(with Y. Zheng)  
Korean Translation by Yong-Jin Lee and Sam-Kwon Oh, Dae Wong Publishing Company, 2003. Also translated in Chinese language.
4. “Computer Networks Laboratory Manual,” pages 9-31, Prentice Hall, 1999.  
(Editor: F.S. Grodzinsky)

## 12. Journal Publications

1. “Communication Performance of 802.11 WLANs,” WSEAS Transactions on Mathematics, Vol. 6, Issue 1, pages 233-239, January 2007.
2. “Distance Learning Education Using the Web,” WSEAS Transactions on Mathematics, Vol. 6,

Issue 1, pages 240-246, January 2007.  
(with M.F. Wyne)

3. "Evolution of an Inter University Data Grid Architecture in Pakistan", WSEAS Transactions on Information Science and Applications, Vol. 2, Issues 9, pages 1361-1366, September 2005.  
(with A.P. Memon)
4. "Cryptography and Security Protocols Course for Undergraduate IT Students," ACM Sigcse Bulletin, Vol. 36, No. 2, pages 44-47, June 2004.  
(with A. Aly)
5. "Trace Driven Simulation of Dynamic Branch Prediction Schemes," Simulation, March/April 2000.  
(with J. Gamez and S.N.J. Murthy)
6. "Introduction to a New Multichannel LAN - the Chi-Pan Net," Journal of Computing and Information, Vol. 2, No. 1, pages 296-307, June 1996. (Also presented at International Conference on Computing and Information, June 1996, Waterloo, Ontario, Canada)  
(with Tien-Lung Chou)
7. "Reliabilities of the Metrological Maintenance / Surveillance Networks of the Standards," Measurement: Journal of the International Measurement Confederation, Vol. 16, pages 195-206, 1995.  
(with R. Husain)
8. "Reliability of k-out-of-n:G Systems With Imperfect Fault Coverage," IEEE Transactions on Reliability, Vol. 43, No. 1, pages 101-106, March 1994.
9. "Emerging Photonic Technologies: Will They Stimulate Another Computer Revolution," Michigan Academician, XXVI, pages 95-101, 1994.  
(with T.E. Ahlswede, S.N.J. Murthy and S.V. Pappu)
10. "Comment on: Modeling a Shared Load k-out-of-n:G System," IEEE Transactions on Reliability, Vol. 41, No. 2, June 1992.
11. "Performance Models for Multiple Bus Local Area Computer Networks via Markov Process," Int. Journal on Modeling and Simulation, Vol. 9, No. 2, pages 33-38, 1989.  
(with M. Alam)
12. "A Semi-Markovian Model of CSMA/CD Networks," Computer Communications, Vol. 12, No. 3, pages 131-140, 1989.  
(with A.K. Sood)
13. "Performance Evaluation of an Extended Token Bus Protocol," Int. Journal of Systems Science, Vol. 20, No. 7, pages 1291-1304, 1989.  
(with A.K. Sood)
14. "An Extended Token Bus Protocol for Embedded Networks," Int. Journal of Computers and Electrical Engineering, Vol. 14, No. 3/4, pages 105-123, 1988.  
(with A.K. Sood and K.Y. Srinivasan)
15. "Semi-Markov Performance Model of an Extended Token Bus Protocol," Int. Journal of Electronics, Vol. 65, No. 5, pages 907-921, 1988.  
(with A.K. Sood and K.Y. Srinivasan)
16. "Unavailability Analysis for Systems Subject to Unannounced Failures," Int. Journal of Systems

Science, Vol. 18, No. 4, pages 727-733, 1987.  
(with M. Alam)

### 13. Refereed Conference Publications

1. "Performance of UAE University Campus Computer Network," UAE University Research Conference, vol. 1, pages CIT57-65, April 2006.  
(with H. Kidwai, M.A. Qader, K. Shuaib, and F. Sallabi)
2. "Performance of Next Generation Mobile Communication Systems," in Proc. 4<sup>th</sup> WSEAS Int. Conference on Computational Intelligence, Man-Machine Systems, and Cybernetics, pages 248-253, Miami, Florida, November 17-19, 2005.
3. "An Integrated Architecture for Ubiquitous Military Compound Networks," in Proc. 9<sup>th</sup> World Multi-Conference on Systematics, Cybernetics and Informatics, Orlando, Florida, Volume VIII, pages 113-119, July 10-13, 2005.  
(with A. Lakas, K. Shuaib and E. Barka)
4. "Effect of Fragmentation in WLAN Systems with Interference Problems," in Proc. 20<sup>th</sup> International Conference on Computers and Their Applications, New Orleans, LA, pages 115-120, March 16-18, 2005.
5. "A Course on Computer Networks Based on CC-2001," in Proc. of American Society of American Education (ASEE) 2004 Annual Conference and Exposition, Salt Lake City, Utah, pages 115-120, June 20-23, 2004.  
(with A. Aly)
6. "A Framework for the Simulation of UAE University Campus Computer Network," in Proc. of Annual UAE University Research Conference, vol. 1, pages CIT57-65, April 24-26, 2004.  
(with K. Shuaib, H. Kidwai, F. Sallabi and M. Javeed)
7. "Physical Layer Performance of 802.11g WLAN," in Proc. of Applied Telecommunications Symposium, Washington, DC, pages 175-178, April 18-22, 2004.  
(with M. Boulmalf and A. Sobh)
8. "Performance of WAN Bottleneck Links Through Simulation," in Proc. of Applied Telecommunications Symposium, Washington, DC, pages 165-169, April 18-22, 2004.  
(with H. Kidwai)
9. "Information Technology Curriculum at UAE University," in Proc. of International Workshop on Frontiers of Information Technology, Islamabad, Pakistan, Dec 23-24, 2003.
10. "Performance Evaluation of Operational GSM's Air-Interface (Um)," in Proc. of Applied Telecommunication Symposium, Orlando, Florida, pages 62-65, March 2003.  
(with M. Boulmalf)
11. "An Authentication Mechanism for Digital Wireless Mobile System," in Proc. of the ACIS 2<sup>nd</sup> International Conference on Software Engineering, Artificial Intelligence, Networking & Parallel/Distributed Computing, Nagoya, Japan, pages 340-345, August 2001.  
(with S. Bopanna and H. Hughes)
12. "Performance of Mobile Multimedia Communication in Hybrid Networks," in Proc. Advanced Simulation Technologies Conference, Washington, D.C., pages 35-40, April 2000.

13. "A Client/Server Model to Animate Fluid Flows," In Proc. Symposium on Performance Evaluation of Computer and Telecommunications System, Chicago, IL, July 1999.  
(with S. Rubin, X. Din and G. Hu)
14. "The Networks Course: Old problems, new Solutions," Proc. of 30<sup>th</sup> SIGCSE Technical Symposium on Computer Science Education, pages 360-361, March 24-28, 1999, New Orleans, Louisiana.  
(with Nizar Al-Holou et. al.)
15. "Trace Driven Simulation of Dynamic Branch Prediction Schemes," Proc. of 1998 Symposium on Performance Evaluation of Computer and Telecommunication Systems, pages 242-248, July 19-22, Reno, Nevada.  
(with J. Gamez and S.N.J. Murthy)
16. "Simulation of Synchronization Methods in Multimedia Systems," Proc. of 1998 Symposium on Performance Evaluation of Computer and Telecommunication Systems, pages 285-289, July 19-22, Reno, Nevada.  
(with J. Tang and S.N.J. Murthy)
17. "Simulation of Shufflenet Multichannel Network Under Single Link Failure," Proc. Summer Computer Simulation Conference (SCSC), pages 875-879, July 1995.  
(with Y. Kim)
18. "Reliability of Multiple Bus Multiprocessor Systems," Proc. International Conference on Parallel Processing (ICPP), Vol. I, pages 248-252, August 1992.
19. "Small-NET: A LAN Laboratory Using PT68K2 Systems," Proc. ASEE Annual Conference, pages 351-356, June 1992.  
(with S. Acharya)
20. "Simulation of Switching Methods in ISDN System Using COMNET II.5," Proc. 23rd Pittsburgh Conference on Modeling and Simulation, pages 2689-2696, May 1992.  
(with P. Li)
21. "Reliability Analysis of Multichannel LANs," Proc. 22nd Pittsburgh Conference on Modeling and Simulation, pages 2312-2319, May 1991.  
(with M. Mah and W. Qei)
22. "Performance Models of Token Bus Scheme Using DEVS Technique," Proc. Summer Computer Simulation Conference (SCSC), pages 89-94, July 1990.
23. "Simulation of Token Bus Protocol Using SIMSCRIPT II.5," Proc. 21st Pittsburgh Conference on Modeling and Simulation, pages 1201-1205, May 1990.  
(with I. Rattan and W. Nassereddine)
24. "Performance Simulation Models of Bus Access Schemes," Proc. 3rd Pan Pacific Computers Conference, Beijing, China, August 1989.
25. "Simulation Model of Distributed Loop Computer Network Using SLAM," Proc. 20th Pittsburgh Conference on Modeling and Simulation, pages 971-975, May 1989.  
(with M. Alam)
26. "Performance Evaluation of CSMA/CD Networks Using Markovian Approach," Proc. Int. Global Communications Conference (GLOBECOM), pages 1108-1112, November 1988.  
(with A.K. Sood)
27. "An Extended Token Bus Protocol for Embedded Networks," Proc. 8th Int. Conference on

- Distributed Computing Systems (ICDCS), pages 145-152, June 1988.  
(with A.K. Sood and K.Y. Srinivasan)
28. "IMAP: A Deterministic Bus Protocol for Embedded Networks," Proc. Phoenix Conference on Computer Communications (PCCC), pages 293-297, March 1986.  
(with A.K. Sood and K.Y. Srinivasan)
  29. "Performance Simulation Model of a Multiple Bus Computer Network Using SLAM," Proc. Summer Computer Simulation Conference (SCSC), pages 294-298, July 1985.  
(with M. Alam and A.K. Sood)
  30. "Markov Models for Performance Evaluation of Multiple Bus Local Area Computer Network," Proc. Int. Symposium on Circuits and Systems (ISCAS), pages 715-718, June 1985.  
(with A.K. Sood and M. Alam)
  31. "Software Performance Modeling and Evaluation Using Markov and Semi-Markov Processes," Proc. Summer Computer Simulation Conference (SCSC), pages 49-54, July 1984.  
(with M. Alam and S.I. Ahmad)
  32. "Performance Simulation Model of Distributed Loop Computer Network Using SLAM," Abstract Published in the conference proceedings, Proc. 20th Hawaii Int. Conference on System Sciences, January 1987.  
(with M. Alam)

#### **14. Technical Reports and Other Publications**

1. "Simulation Analysis of PF/CF in PSU2e," Internal Memorandum, Lucent Technologies, July 2002.
2. "PCF/PHE2 Simulation Model," Internal Memorandum, Lucent Technologies, July 2002.
3. "PHA2 Simulation Model and Results," Internal Memorandum, Lucent Technologies, June 2002.
4. "Performance Requirements Test Plan for 64 and 128 HSPD Calls on DPH Assigned to a PHV5," Internal Memorandum, Lucent Technologies, October 2001.  
(with Jie Yao)
5. "PSU Packet Bus Performance Model," Internal Memorandum, Lucent Technologies, June 2001.
6. "Simulation Study of PHV4 3G-1X Data Feature," Internal Memorandum, Lucent Technologies, May 2001.
7. "The International Islamic Intranet," Islamic Horizon Magazine, Vol. 27, No.4, pages 30-31, July/Aug 1998.
8. "Towards Building an International Islamic Intranet," (Abstract Published) Islamic Horizon Magazine, Vol. 27, No. 3, page 41, May/June 1998. (Paper Presented at Muslims & the Information Superhighway, International Conference, April 1998)
9. "Simulation Study of Embedded Computer Networks," ECE Department, Wayne State University, 1986.  
(with A.K. Sood)
10. "A User Guide to SIMNET," ECE Department, Wayne State University, 1985.  
(with A.K. Sood et. al.)

11. "Fault Recovery in Multiple Processor Systems," ECE Department, Wayne State University, (with A.K. Sood and C.B. Friedlander)
12. "Vetronics Systems Architecture," ECE Department, Wayne State University, 1984. (with A.K. Sood et. al.)

## 15. Proposals Funded

PI, " Performance and Simulation Modeling of UAEU Campus Computer Network," September 2003 and March 2005. (Amounts: AED 17,000 in 2003, AED 16,300 in 2005)  
With K. Shuaib, F. Sallabi, M. J. Khawaja, and M. Javeed

PI, "Distance Learning through Videoconferencing over the Internet," Szabist, May 2004.  
(Amount: Rs 50,000)

Co-PI, "CISE Research Instrumentation: Multimedia Data Over Wireless Networks with Virtual Reality Applications," NSF grant, March 2000. (Amount: \$119,871 including \$41,955 match from MSU) In Collaboration With MSU  
With H.D. Hughes (PI), C.B. Owen (Co-PI) and F. Biocca (Co-PI)

PI, "Teaching Computer Networks Using OPNET ," Premier Display, Faculty Teaching and Program Development Committee (CMU), June 1998. (Amount: \$948)

PI, "Teaching Discrete Event Simulation Using Object Oriented Programming Approach," Teaching Fellowship from Faculty Teaching and Program Development Committee (CMU), Summer 1998. (Amount: \$2400)

PI, "Network Troubleshooting," Faculty Teaching and Program Development Committee (CMU) grant to participate in three day training by American Research Group, Dearborn, MI, November 1997. (Amount: \$1200)

PI, "Development of a Testbed for Computer Network Modeling and Simulation," Education Technology Committee, Central Michigan University, April 1997. (Amount: \$8200)  
With S.N.J. Murthy (Co-PI)

PI, "Network Planning and Simulation Using COMNET," Faculty Teaching and Program Development grant to attend Network Planning and Simulation Conference (Two day training using COMNET), February 1997. (Amount: \$1140)

PI, "Advanced Studies in Computer Science for a Better Career," Graduate Recruiting Mini-grant, College of Graduate Studies, CMU, February 1996. (Amount: \$432)

PI, "Performance of Multichannel Computer Networks," FRCE sabbatical grant proposal, December 1994. (Amount: \$478)

PI, "Performance of Multichannel Computer Networks," December 1994, (CMU Sabbatical Leave Proposal)

Co-PI, "Multimedia Courseware Development and Instruction," Sun Microsystems, June 1994. (Amount: \$3995)  
With G. Hu (PI), S.N.J. Murthy (PI), M. Stinson (Co-PI) and S. Stahl (Co-PI)

PI, "Simulation Models of Computer Networks," Summer Fellowship and Research Professorship

Committee, CMU, May-August 1992. (Amount: \$2400)

PI, "Computer Networks Laboratory," Instrumentation and Laboratory Improvement (ILI) division of National Science Foundation (NSF), 1989-91. (Amount: \$23,988 ;Includes 50% matching funds by CMU)  
With K. Abani (Co-PI)

## 16. Received Grants

MSU/NSF Minigrant to support the Computer Network laboratory, August 2000.  
(Amount \$2000 including \$1000 matching fund by CMU)

International Engineering Consortium grant to attend International Communications Forum, October 1998.  
(Amount: Approximately \$2000 covering the registration for Pro-forum and seminars)

National Science Foundation grant through Michigan State University to participate in Computer Network workshop at Michigan State University, July/August 1998.  
(Amount: \$1000)

Faculty teaching and Program Development (FTPD) Premier Display, "The Networks Course: Old Problems, new Solutions," 30<sup>th</sup> SIGCSE Technical Symposium on Computer Science Education, March 24-28, 1999, New Orleans, Louisiana.  
(Amount: \$600)  
Co-panelist with Nizar Al-Holou et.al.

International Engineering Consortium grant to attend International Communications Forum, October 1997. (Amount: Approximately \$2000 covering the registration for Tec-forum and seminars)

International Engineering Consortium grant to attend International Communications Forum, September 1996. (Amount: \$2850 covering the registration for Pro-forum, seminars and forums)

National Science Foundation grant through Michigan State University to purchase Computer Software and Hardware to facilitate the teaching of Computer Network courses, August 1996.  
(Amount: \$2500; includes \$1000 matching funds from the Dean's Office, CMU)

National Engineering Consortium grant to attend National Communications Forum, September 1994. (Amount: \$1140 covering conference registration)

National Engineering Consortium grant to attend National Communications Forum, September 1993. (Amount: \$1090 covering conference registration)

Laboratory development grant from Department of Computer Engineering, King Fahad University of Petroleum and Minerals, Dhahran, Saudi Arabia, October 1992. (Amount: \$98,000 = Saudi Riyals 370,000)

National Engineering Consortium grant to attend ComForum, June 1992. (Amount: \$995 covering conference registration)

National Engineering Consortium grant to attend Eastern Communications Forum, April 1991.  
(Amount: \$1200 covering conference registration)

Dean's Award for Summer Research, CMU, Summer 1989. (Amount: \$1200)

Travel Awards (for paper presentations) from Faculty Development Fund (U. of Toledo), 1986-88. (Amount: \$3500)

Travel Awards (for paper presentations) from Faculty Research and Creative Endeavors (FRCE) Funds at Central Michigan University  
1988-2000. (Amount: \$8500)

## **17. Scientific, Professional Society Memberships and Honors**

Listed in 2005-06 edition of International Who's Who of Professionals

Institute of Electrical and Electronics Engineers (IEEE) (since 1983 currently Senior Member)  
Education Society (since 2005)  
Computer Society (since 1983)  
    Technical Committee on Distributed Processing (1986-92)  
Communications Society (since 1986)  
Reliability Society (1990-2000)

International Society for Computers and Their Applications (since 2005)

Association for Computing Machinery (ACM) (1988-1994)  
    Special Interest Groups in Distributed Computing, Data Communications, Simulation  
    and Design Automation (1988-92)

Society for Computer Simulation (SCS) (1990-92, 1998-2000)

## **18. University/Community Service**

Member, University Administrative Council, Clayton State University (2007-Present)

Member, Graduate Council, Clayton State University (2007-Present)  
University Graduate Faculty (Term: 2007-2010)

Member, College Promotions Committee, UAE University (2003-2007)

Member, College Curriculum Committee, UAE University (2002-2003)

Member, College Council, UAE University (2002-2003)

Member, College Teaching Excellence Taskforce, UAE University (2003-2004)

Member, Undergraduate Curriculum Committee, CMU. (1997-2000)  
Committee meets bi-weekly to discuss and recommend the undergraduate curricular changes

Member, Excellence in Teaching Award Committee, CMU. (1994-1997)

Member, Curriculum Committee, Computer Science Department, CMU.  
(1989-92, 1993-98)  
Chair (1989-90)

Member, Hiring Committee, Computer Science Department, CMU.  
(1993-2000)

Member and Chair, Graduate Admissions and Assistantships Committee, Computer Science Department, CMU. (1989-92, 1993-2000)

Member, Graduate Admissions and Assistantships Committee, Computer Science Department, CMU. (1989-92, 1993-2000)

This position required advising of graduate students (approximately 50), evaluation of graduate admission/assistantship applications, enforce graduate school standards in the department and communicate the needs/concerns of graduate students to department / graduate school.

Member, Curriculum Committee, College of Arts and Sciences, CMU. (1989-90, 1993-94)

Member and Minutes Secretary, Ph.D. Program Proposal Committee, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia. (1992-1993)

Was responsible for taking minutes for the committee, in addition to planning and developing the Ph.D. program that is now in place.

Chair, Networking and Data Communications Laboratory Development Committee, KFUPM. (1992-1993)

Member, Faculty Research and Creative Endeavors Committee, CMU. (1988-1992)

Member, Curriculum Committee, College of Engineering, U. of Toledo. (1987-88)

Member, Systems Committee, College of Engineering, U. of Toledo. (1986-88)

### **Community Service**

Member, Greater Lansing Islamic School Committee (Grade Pre K-8), East Lansing, MI. (1997-2000)

Member, Greater Lansing Islamic School Committee (Grade Pre K-8), East Lansing, MI. Helped in the school operation through staff management, curriculum design, computer equipment purchases and computer-related seminars. (1997-2000)

Member, Executive Committee, Islamic Center of Greater Lansing, East Lansing, MI. Helped in the Islamic Center operation by coordinating the social and information committee activities. (1995-2000)

Member of the Curriculum Design Team for the Greater Lansing Islamic School (1997)