PERWEZ SHAHABUDDIN

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Experience

COLUMBIA UNIVERSITY   New York, NY
1995–present

Professor of Industrial Engg. and Operations Research. Associate Professor, 1998-2003. Assistant Professor, 1995-1998.

- Research in stochastic modeling methodology, discrete event simulation methodology, and Monte Carlo simulation methodology with applications in telecommunications/multimedia systems, computational finance and reliability.
- Teaching undergraduate/M.S. courses: Probability and Statistics, Stochastic Models, Simulation, Monte Carlo Simulation, and a Ph.D level course: Monte Carlo and Discrete Event Simulation.
- Consulting and visiting positions at IBM T.J. Watson Research Center, AUM Systems and eWonders.com

IBM INDIA RESEARCH LABS   New Delhi, India
2001–2002

Research staff member (on sabbatical leave from Columbia University). Research in design, modeling, and analysis of web-server farms.

IBM T.J.WATSON RESEARCH CENTER   Yorktown Heights, NY
1990–1995

Research Staff Member in the Systems Analysis Department.

- Co-built and managed the development of the SAVE software package (10000 LOC), used at IBM for modeling and availability evaluation of computer and communications systems.
- Transferred research results in the simulation for highly reliable systems into SAVE, making it the first of its kind to use highly effective fast simulation procedures.
- Research in simulation modeling methodology and performance analysis. Modeling, simulation and analysis of computer, telecommunication and multimedia systems.
- Consulting: providing modeling expertise to IBM Advanced Workstation Division and IBM Enterprise Systems, in the area of dependability evaluation of various multiprocessor and mainframe designs.

ENGINEERS INDIA LIMITED   New Delhi, India
1984–1985

Management Trainee in the Systems Engineering and Computer Services Division.

Education   STANFORD UNIVERSITY   Palo Alto, CA
Ph.D. in Operations Research, September 1990.
Dissertation: Simulation and Analysis of Highly Reliable Systems.
Dissertation Adviser: Professor P.W. Glynn.
M.S. in Statistics, December 1987.

INDIAN INSTITUTE OF TECHNOLOGY   New Delhi, India
B.Tech. in Mechanical Engineering, June 1984.
B.Tech. Thesis: Tandem and Priority Queueing Systems.

Awards   *2004 Great Teacher Award* given by the *Society of Columbia Graduates* as "recognition of your students and your peers as a dedicated and inspired undergraduate teacher and mentor" (two given each year, one each to a faculty in Columbia College and Fu Foundation School of Engineering and Applied Science).

1998 IBM Faculty Development Award.

1997 Distinguished Faculty Teaching Award given by the *Columbia Engineering School Alumni Association* for "excellence in teaching engineering undergraduates" (three given each year).

1996 Outstanding Simulation Publication Award given by *INFORMS* (Institute for Operations Research and Management Sciences) *College on Simulation.*

1996 National Science Foundation's Early Career Development (CAREER) Award.

1995 IBM Invention Achievement Award and *No. 1 Patent Rating* (with A. Dan and D. Sitaram; top 5% of IBM's patents in the year)

IBM External Honors Awards, in 1990 and 1994, for " making visible outside IBM the technical leadership of IBM people and IBM Research".

First Prize in the *1990 George E. Nicholson Student Paper Competition*, organized by *INFORMS* "to honor outstanding papers in the field of operations research and management science written by a student".

Honors   *Finalist, Best Paper Award*, at *IEEE INFOCOM 1994 Conference* (with M. Willebeek-Lemair; best 12 out of 449 submitted).

"Outstanding Quality" citation by the Program Committee for a paper that appeared in the *ACM MULTIMEDIA '94 Conference* (with A. Dan and D. Sitaram; best 8 out of 200 submitted).

Elected *Eminent Engineer* by Tau Beta Pi, in 1998. This is bestowed on a person "who has achieved distinction for eminent attainments in engineering."

Editorial Boards	Departmental Editor for "Stochastic Models and Simulation" in *Management Science*, 2003 - present.
	Co-Guest Editor, *ACM Transactions on Modeling and Computer Simulation*, for Special Issue on "Rare Event Simulation", January 2002.
	Editorial Board, *Stochastic Models*, 1999 - present.
	Associate Editor, *Management Science*, 1998 - 2003.
	Editorial Board, *IIE Transactions on Operations Engineering*, 1996 - 2004.
	Associate Editor, *IEEE Transactions on Reliability*, 1995 - 2001.
Professional Activities	Risk Analysis Track Co-ordinator for the *2003 Winter Simulation Conference*.
	Plenary Speaker at the *E-commerce/Finance Workshop* at *Tata Institute of Fundamental Research (TIFR)*, Bombay, April 24th, 2002.
	Invited Scientist at *TIFR*, Bombay, April 2002, July 2003, July 2004,
	Organizing Committee of the *11th INFORMS Applied Probability Conference*, New York, USA, July 2001.
	Plenary speaker at the *Twenty-sixth Conference on the Mathematics of Operations Research*, January 2001, Lunteren, organized by the *Dutch Network of Operations Research*.
	Served on Program Committee of the *Workshop on Mathematical Performance Modeling and Analysis* (MAMA), 1999, 2000, 2001.
	Served on *INFORMS George E. Nicholson Prize Committee* for 2000.
	Served on *INFORMS College on Simulation Outstanding Simulation Publication Awards Committee* for 1999 and 2000 (Chair).
	Guest of the *Timbergen Institute, Vrije University, Amsterdam*, July 15th - July 31st, 2000.
	Program Co-Chair, *Fourth International Workshop on Performability Modeling of Computer and Communication Systems*, College of William and Mary, September 4th-6th, 1998.
	One of 100 scientists/engineers, chosen from all over USA, to attend the *1997 Symposium on the Frontiers of Engineering*, organised by the *National Academy of Engineering*.
	Guest of the *Timbergen Institute, Vrije University, Amsterdam*, May 15th - May 31st, 1999.
	Served on Technical Program Committee of *The 28th Annual International Symposium on Fault Tolerant Computing*, Munich, Germany, June 1998 (FTCS-28).

Applied Probability Cluster Chair for the *1997 Fall INFORMS Meeting*.

Served on Technical Program Committee of *The 26th Annual International Symposium on Fault Tolerant Computing*, Tokyo, Japan, July 1996 (FTCS-26).

Organized and chaired sponsored sessions for various INFORMS, IEEE and ACM Meetings.

Served on NSF Review Panels.

Taught a module on the *SAVE Software Package*, as part of a five day course *Design for Availability*, to worldwide IBM System Engineers at IBM International Education Center, La Hulpe, Belgium, in 1994.

Served on dissertation committees at Stanford University, Rutgers University, University of Saskatchewan.

University Service	*Director, Doctoral Program, IEOR Dept.*, 2002 - Present.

Served on *Dean's Committee for the First Two Years*, *Fu Foundation School of Engineering and Applied Science's (FFSEAS)*, December 2002 - April 2003.

Served on *Committee of Instructions (COI)*, *Fu Foundation School of Engineering and Applied Science's (FFSEAS)*, 2002 - 2003.

IEOR Departmental Representative to *Fu Foundation School of Engineering and Applied Science's (FFSEAS) Undergraduate Admissions Committee* for 1997-1998 and 1998-1999 academic years.

Serving on *IEOR Graduate Admissions Committee*, 1996-present.

Publications (Journals)	Publications in *Operations Research*, *Management Science*, *Mathematical Finance*, *Journal of Applied Probability*, *Journal of Derivatives*, *IEEE Transactions on Automatic Control*, *ACM Transactions on Modeling and Computer Simulation*, *IEEE Transactions on Computers*, *IEEE/ACM Transactions on Networking*, *IEEE Transactions on Reliability*, *ACM/Springer's Multimedia Systems*, *Journal of Parallel and Distributed Systems*, *Performance Evaluation*, *Computer Networks*, *Probability in the Engineering and Informational Science*.

Publications (Conf. Pro.)	Publications in proceedings of *Monte Carlo and Quasi-Monte Carlo Methods Conference*, *International Conference on Computational Finance*, *Fault Tolerant Computing Symposium (FTCS)*, *PERFORMANCE*, *International Performance and Dependability Symposium(IPDS)*, *INFOCOM*, *Winter Simulation Conference(WSC)*, *ACM MULTIMEDIA*.

Patents	Awarded 3 US Patents: 2 in the multi-media area and 1 in the financial engineering area. One patent pending in the financial engineering area.

Software Dev.	Wrote a VAR (Value-At-Risk) Simulator in MATLAB and C, for estimating risk and value-at-risk of portfolios (with P. Glasserman and P. Heidelberger; 2000 lines of code).

Wrote the SAVE simulator and user interface parser in FORTRAN on a VM/CMS based, mainframe platform (with A. Blum, A. Goyal, M. Nakayama; 10000 lines of code).

Programming experience also with SIMAN (simulation language).

Ph.D.'s Graduated	F. Zhang (October 2001; now at IBM T.J. Watson Research Center; finalist in *INFORMS Section on Telecommunication's 2002 Doctoral Dissertation Awards*)
	N. K. Boots (February 2002; co-adviser; now at ABN/AMRO Bank; paper based on Ph.D. work received *Honorable Mention* in the *2001 George E. Nicholson Student Paper Competition* organised by *INFORMS*)
	Z. Huang (June 2004; now at Lehman Brothers)
Ph.D.'s Supervision	W. Kang (expected completion June 2005)
	C-W. Hu (expected completion December 2005)
	B. Woo (expected completion June 2005)
Grants 1995-Present	PI on NSF Grant, 2003-2006, "Fast Simulation Methods for Risk Management" (with Paul Glasserman; $400,000).
	Co-PI on NSF Grant, 2002-2004, "Stochastic Models for the Design and Management of Customer Contact Centers" (with Ward Whitt; $150,000).
	IBM Faculty Development Award for 1998-1999 ($80,000 after industial matching and a RS6000 Workstation).
	PI (Principal Investigator) on NSF CAREER Award Grant, 1996-2002 ($200,000, low overhead, industrial matching provision).
	PI on IBM Sponsored Research Grant 1997-2000 ($130,000 after industrial matching).
	Co-Awardee in IBM University Partnership Award for 1998-1999 (with P. Glasserman; $40,000).
	PI on AT&T Special Purpose Grant, 1996-1997 ($40,000 after industrial matching).
	PI on AUM Systems Grant, 1996-1997 ($30,000 after industrial matching).
	Co-PI on joint NSF/IBM Grant that enabled the funding of a 2 year (1995-1997) post-doctoral fellowship for co-operative research between Columbia University and IBM Research (with Paul Glasserman, NSF $70,000, IBM $40,000).
	One of 8 co-PI's on NSF Group Infrastructure Grant, 1996-2001, for the Center of Applied Probability (CAP) at Columbia University, (NSF $1,000,000, Columbia University $250,000).
Affilliations	Member of *INFORMS*, *IEEE*, *ACM*.
Honor Soc.	Tau Beta Pi (honorary member).