

ALOK R. CHATURVEDI

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EDUCATION

Ph.D., MIS/Computer Science, University of Wisconsin-Milwaukee, 1989.
M.S., MIS/Computer Science, University of Wisconsin-Milwaukee, 1985.
B.E., Mechanical Engineering, Birla Institute of Technology, Ranchi, India, 1980.

AFFILIATIONS

Purdue University

2018 - 2019 Area Coordinator, MIS
2013 - Director, Institute for Social Empowerment through Entrepreneurship and Knowledge ([ISEEK](#))
2006 - Professor, Krannert School of Management
2006 - Professor, Department of Computer Sciences (Courtesy)
2014 - 2016 Global Affairs Fellow for Policy, Global Policy Research Institute
2004 - 2006 Associate Professor, Department of Computer Sciences (Courtesy)
2003 - 2007 Director, Purdue Homeland Security Institute
2001 - 2012 Director, Purdue e-Business Research Center
Director, Indiana Consortium for e-Business Research
1993 - 2006 Associate Professor, Krannert Graduate School Management
1988 - 1993 Assistant Professor, Krannert Graduate School Management

Institute for Defense Analyses

1995 - 2005 Adjunct Research Staff Member, Institute for Defense Analyses, Alexandria, Virginia. IDA is a federally funded research and development center (FFRDC), whose purpose is to promote national security and the public interest.

Simulex Inc.

1999 - 2013 Founder, Chairman, and Chief Executive Officer.

RESEARCH INTERESTS

Machine Learning; Big Data and Predictive Analytics; Data Science for Social Good; Data Science for National and Homeland Security; Manufacturing-as-a-service; AI and Evolutionary Computing; Social Empowerment through Entrepreneurship and Knowledge; Predictive Analytics; Mobile and Serious Gaming; Sentient World Simulation; Computational Models of Human Behavior and Agent-based Modeling and Simulation; Counterterrorism, Preparedness and Response; and Bio-terrorism and Individual-based Computational Epidemiology.

AWARDS AND RECOGNITIONS

Outstanding Commercialization Award for Purdue Faculty (2007) – in recognition for his role in the development of the Synthetic Environments for Analysis and Simulation (SEAS) technology, which seeks to explain how governments, companies, organizations and the public respond to certain situations, including terrorism. The award honors the recipients for their discoveries that have resulted, or may soon result, in commercial applications that benefit society.

Federal 100 by FCW – awarded to top executives from government, industry and academia who had the greatest impact on the government information systems community in 2006.

Sagamore of the Wabash (2005) awarded by the Governor of Indiana for his services to the State of Indiana. Sagamore of the Wabash is the highest civilian award in the State of Indiana.

National Training and Simulation Association's (NTSA) award for best Simulation for Analysis in all of Department of Defense for Synthetic Environments for Analysis and Simulation (SEAS), 2005.

SEAS featured in a National Science Foundation report as a success story for taking a fundamental research to wide acceptance within the Department of Defense.

SEAS featured in *Inside the Pentagon* publication, Nov. 2, 2006.

Shachtman, Noah, "["Sim Iraq" sent to battle zone](#)", *Wired*, Nov. 19, 2007

SEAS Featured in [Federal Computer Weekly](#), Nov. 6, 2006.

SEAS Featured in the [Register](#), June 23, 2007.

RESEARCH GRANTS

PI, Mentoring for Business Success MOOC, funded 25,000 by Wadhvani Foundation, 2017.

PI, Project Saksham, funding approved by Government of India through the Prime Minister Yuva Program, 2018.

Co-PI, "Internet of Things Reference Model for Brilliant Manufacturing," General Electric; 1-month AY support, 2015-16.

Co-PI, Mandela Washington Fellowship program in collaboration with College of Engineering and Discovery Park. The project to be funded by the YALI program of US Department of State, 2017.

Co-PI, Mandela Washington Fellowship program in collaboration with College of Engineering and Discovery Park. The project was funded by the YALI program of US Department of State, 2016.

PI, "Dynamic Data Driven Operator Error Early Warning System." Funded \$300,000 by Air Force Office of Scientific Research. Collaborators: Doug Adams, Sunil Prabhakar, Tahira Reid, and Robert West (Iowa State University), 2014.

PI, "Human Behavior Modeling for National Cyber Range," \$60,000 grant from DARPA, 2009.

PI, "CSR--CSI: Composing Large-Scale Synthetic Environments through Self-Assembly of Heterogeneous Simulations," \$325,000 grant from the National Science Foundation, 2007-2010.

PI, "Center for Computational Homeland Security," \$2,200,000 grant from Indiana 21st Century Research and Technology Fund (co-PIs: Coyle, Dark, Engi, and Mehta)

PI, "Synthetic Environment for Continuous Experimentation," \$1,178,000 ITR grant from National Science Foundation (co-PIs: R. Aliprantis, E. Houstis, S. Mehta, J. Busemeyer, R. Bartlett, M. Ward, S. Mittal, and D. Dolk).

PI, "Synthetic Environment for Continuous Experimentation," \$1,350,000 grant from Joint Program Executive Office for Chemical/Biological Defence (co-PIs: R. Aliprantis, E. Houstis, S. Mehta, J. Busemeyer, R. Bartlett, M. Ward, S. Mittal, and D. Dolk).

PI, "Air Traffic Management Research for the 21st Century and Beyond," \$90,000 grant from e-enterprises Center (co-PIs: M. Rotea, D. Andrisani, T. Carney, M. Nolan, and S. Mehta), 2003.

PI, "Scalable Enterprise Systems Phase II: Agent Based Scalable Enterprise System for Enterprise Co-Design," \$500,000 grant from National Science Foundation, 2001.

PI, "ICER: Indiana Consortium for e-business Research," \$1,000,000 grant from Indiana State 21st Century Research and Technology Fund, 2001

PI, "Neptune: NAVAIR Supply Chain Modeling and Simulation," \$120,000 grand from Office of Naval Research, 2001.

Co-PI, "Behavior Based Artificial Agents for Information Security," \$60,000 grant from the Center of Education and Research in Information Assurance and Security (CERIAS), Purdue University, 2001 (co-PIs Mukul Gupta, Shailendra Mehta, and Bharat Bhargava).

PI, "An Agent-based Modeling Framework for Scalable Interdependent Markets and Organizations" \$100,000 National Science Foundation, 2000.

PI, "DoD Acquisition Policy Live Cases, \$131,000 grant from the US Navy, 1999.

PI, "Information Security Policy for e-Commerce in the Financial Sector," \$50,000 grant from the Center for Education and Research in Information Assurance and Security (CERIAS), Purdue University, West Lafayette, IN 47907, 1999. (co-PIs S. Mehta and M. Gupta).

PI, "Web-based 3D Modeling and Visualization for Supply-Chain Forecasting," (co-PI Gordon Wright), funded \$100,000 by SAP America, 1998.

PI, "Database and User Interface Design for the Synthetic Environments for National Security Estimates," Funded \$20,000 by Institute for Defense Analyses, 1998.

PI, "Interagency Information Wargame," Funded \$20,000 by the Presidential commission on Critical Infrastructure Protection, 1997.

PI, "Synthetic Environments for Analysis and Simulation," (co-PIs Shailendra Mehta and Chandrajit Bajaj), funded \$253,000 equipment grant from Intel, 1997.

PI, "Economics of Software Renting and Superdistribution," over \$11,000 grant from Purdue Research Foundation, 1997-98.

PI, "Center for Computational Image Analysis and Visualization," charter member, funded \$100,000 a year recurring through Purdue University research Reinvestment program.

PI, "3-D Fax," (with C.L. Bajaj) funded \$23,000 by AT&T Foundation, 1995.

PI, "Measuring the Effectiveness of Distance Learning," funded \$36,000 by PictureTel, 1994.

PI, "Real-Time and Multimedia Transaction Processing for Enterprise Integration," funded \$10,200 by Purdue Research Foundation, 1994.

PI, "Computational Ecology and Organizational Design," funded \$49,999 by IBM, 1993.

Co-PI, "Enhanced Teaching and Learning Effectiveness Using Technology Based Delivery," funded \$1,200,000 for five years by Ameritech, 1993.

PI, "Virtual Collocation and Navigation through Virtual Environments," (co-PI C.L. Bajaj), funded \$30,000 by CMME, Krannert School of Management, Purdue University, 1993.

PI, "Workgroup Computing," funded \$4,500 by Microsoft, 1993.

PI, "Key Information Systems Management Issues in Developing Countries: Differences in the Indian and US Contexts." Research funded by the Center for International Business and Economics Research (CIBER), Krannert Graduate School of Management, Purdue University, funded by CIBER, 1993.

PI, "Model Management Systems in Business: An Empirical Study," (co-PIs G. Wright and Radha Mookerjee) a Research Grant of \$10,000 from AT&T-GIS, January 1992 - December 1992.

PI, "An Architecture for Cooperative Control in Computer Integrated Manufacturing," (with Rakesh Gulati). Research funded by a dissertation fellowship to Rakesh from the Center for the Management of Manufacturing Enterprises, Krannert Graduate School of Management, Purdue University, 1992.

PI, "An Architecture for Manufacturing Enterprise Integration," (co-PI D.L. Nazareth), Research funded by a Grant from the Center for the Management of Manufacturing Enterprises, Krannert Graduate School of Management, Purdue University, 1992.

PI, "Neural Nets for Scheduling Algorithm Selection" (co-PI K. Altinkemer & E. Tunc), Research funded by a Grant from the Center for the Management of Manufacturing Enterprises, Krannert Graduate School of Management, Purdue University, 1992.

PI, "Expert System Problem Selection: An Innovation Management Perspective," (co-PI Carol Brown) a Research Grant of \$2,000 from the Center for the Management of Manufacturing Enterprises, Krannert Graduate School of Management, Purdue University, 1990.

PI, "A Hybrid Model for FMS Scheduling: Integrating Simulation and Machine Learning," a Research Grant of \$3,500 from the Center for the Management of Manufacturing Enterprises, Krannert Graduate School of Management, Purdue University, 1989.

PATENTS

US Patent 1165.005US1. Synthetic Environment, A broad patent with 27 claims.

US Provisional Patent 1165.034PRV, Personal Participatory Programming: The Next Generation Education and Entertainment System.

REFEREED PUBLICATIONS

Chaturvedi, A., Chaturvedi, R., and Armstrong, B. "Securing the Food Supply Chain: Understanding Complex Interdependence through Agent-Based Simulation." *Health and Technology*: Vol. 4, Issue 2, pp 159-169; June 2014.

Chaturvedi, R., B. Armstrong, A. Chaturvedi, D. Dolk, and P. Drnevich, "Got a Problem? Agent-based modeling becomes mainstream," *Global Economics and Management Review*, Vol 18:2, pp 33-39, 2013.

Chaturvedi, A. R., Dolk, D. R; Drnevich, P. L., "Design Principles for Virtual Worlds," *MIS Quarterly*, Vol. 35, No. 3, pp 673-684, 2011.

Shawn C. McKay, Alok Chaturvedi, Douglas E. Adams, "A Process for Anticipating and Shaping Adversarial Behavior," *Naval Research Logistics*, Vol. 58, No. 3, pp 255-280, 2011.

Moskowitz, H., Drnevich, P., Ersoy, O., Altinkemer, K., & Chaturvedi, A. Using Real-Time Decision Tools to Improve Distributed Decision Making Capabilities in High-Magnitude Crisis Situations. *Decision Sciences* Vol. 42, No. 2, 477-493, 2011.

Gupta, Mukul, Chaturvedi, Alok, Mehta, S., "Economic Analysis of Tradeoffs between Security and Disaster Recovery," *Communications of the Association for Information Systems*, Vol. 28, Article 1, 2011.

Linton, R., Abbey, N., McSwanne, D., Kastner, J., Bhatt, T., Hodge, S., Getty, K., Maier, D., Kastner, C., Chaturvedi, A., and Woodley C., Use of Stakeholder-Driven, DACUM Process to Define Knowledge Areas for Food Protection and Defense, *Journal of Homeland Security and Emergency Management*," Vol. 8, No. 2, Article 6, 2011.

Drnevich, P., T. Brush, and A. R. Chaturvedi, "Examining the Implications of Process and Choice For Strategic Decision Making Effectiveness," *International Journal of Decision Support System Technology*, Vol. 2, No. 3, pp 1-15, 2010.

Mahulkar, V., McKay, S., Adams, D. E., and Chaturvedi A. R. "System of Systems Modeling and Simulation of a Ship Environment with Wireless and Intelligent Maintenance Technologies," *IEEE Transactions on System, Man & Cybernetics, Part A*, Vol. 39:6, pp. 1255-1270, Nov. 2009.

Drnevich, P., Chaturvedi, A., Mehta, S., and Ramanujam, R. "Affiliation or Situation: What Drives Strategic Decision Making in Crisis Response?" *Journal of Managerial Issues*, Vol 18:3, Summer 2009.

Bandyopadhyay, S., Barron, J., and Chaturvedi, A., "Capacity and Entry Issues in Online Exchanges," *European Journal of Operational Research*, Volume 185, Issue 2, pp 849-863, March 2008.

Jaisingh, J., J. Barron, S. Mehta, and A. Chaturvedi, "Privacy and pricing personal information," *European Journal of Operational Research*, Volume 187, Issue 3, Pages 857-870, 2008.

Anderson, J., Chaturvedi, A., and Cibulskis, "Simulation tools for developing policies for complex systems: Modeling the health and safety of refugee communities," *Healthcare Management Science*, Volume 10, Number 4, pp 331-339, December, 2007

Bussemeyer, J., Barkan, R., Mehta, S. and Chaturvedi, A., "Context Effects and Models of Preferential Choice: Implications for Consumer Behavior, *Marketing Theory*, Vol. 7, No. 1, pp. 39-58, 2007.

Mukul Gupta, Jackie Rees, Alok Chaturvedi, and Jie Chi, "Matching Information Security Vulnerabilities to Organizational Security Profiles: A Genetic Algorithm Approach," *Decision Support Systems*, Volume 41, Issue 3, March 2006, pp 592-603.

Bandyopadhyay, Barron, and Chaturvedi, "Competition among Sellers in Online Exchanges," *Information Systems Research*, Vol. 16, No. 1, pp 47-60, 2005.

Chaturvedi, A. Mehta, S., and Gupta, M.K., "Computational Experimentations in Market and Supply-chain Co-design," *Journal of Information Systems and E-Business Management*, Vol. 4, No. 1, pp 25-48, 2006.

Chaturvedi, Mehta, Dolk, and Ayer, "Artificial Labor Market," *European Journal of Operational Research*, No. 166, pp 694-716, 2005

Bose, I., Altinkemer, K., and Chaturvedi, A. , "Tradeoff Decisions in the Design of a Backbone Network using Visualization" *Decision Support Systems*, 35 (2003) 335-351.

Yue, Wei T. and Chaturvedi, Alok, "The Reward Based Online Shopping Community," *EM - Electronic Markets*, Vol. 10, No. 4, 2000.

Chaturvedi, A. R., Choubey A. K., and Roan, J. S., "Active Replication and Update of Content for Electronic Commerce." *International Journal of Electronic Commerce*, vol. 5, no 3, 2000.

Chaturvedi, A. R. and Mehta, S., "Simulations in Economics and Management: Using the SEAS Simulation Environment," *Communications of the ACM*, March 1999.

Chaturvedi, A. R., Choudhary, V., and Tomak, K., "Economic Benefits of Software Renting," *Journal of Organizational Computing and Electronic Commerce*, 1999.

Wright, G., Chaturvedi, A.R., Mookerjee, R., and Garrod, S., "Integrated Modeling Environment in Organizations: An Empirical Study," *Information Systems Research*, vol. 9, no. 1, March 1998.

Altinkemer, K., Chaturvedi, A.R., and Kondareddy, S., "Business Process Reengineering and Organizational Process: An Exploration of Issues," *International Journal of Information Management*, 1998.

Chaturvedi, A. R., and Gupta, S., "SimDS: A Simulation Environment for the Design of Distributed Database Systems," *Database*, 1998.

Altinkemer, K., Chaturvedi, A. and Kondareddy, S., "Evolution of America's Infostructure," *Decision and Information Technologies*, vol 19, pp 483-498, 1994.

Altinkemer, K., Chaturvedi, A., and Gulati, R.K., "Information Systems Outsourcing: Issues and Evidence," *International Journal of Information Management*, vol 14, no 4, pp 252-268, 1994.

Chaturvedi, A.R., Choubey, A.K., and Roan, J.S., "Scheduling the Allocation of Data Fragments in a Distributed Database Environment: A Machine Learning Approach," *IEEE Transactions on Engineering Management*, vol 41, no.2, pp 194-207, 1994.

Chaturvedi, A.R. and Nazareth, D., "Investigating the Effectiveness of Conditional Classification: An Application to Manufacturing Scheduling," *IEEE Transactions on Engineering Management*, vol 41, no.2, pp 183-193, 1994.

Chaturvedi, A.R., "FMS Scheduling and Control: An AI Approach to Achieve Multiple Decision Goals," *Expert Systems with Applications: International Journal*, vol. 6, pp. 267-286, 1993.

Chaturvedi, A.R., "Acquiring Implicit Knowledge in a Complex Domain," *Expert Systems with Applications: International Journal*, vol. 6. pp. 23-35, 1993.

Chaturvedi, A.R., Hutchinson, G. K. and Nazareth, D. "Supporting Complex Real-Time Decision Making through Machine Learning," *Decision Support Systems*, vol 9, pp. 1-21, 1993.

Mookerjee, V. & Chaturvedi, A.R., "A Blackboard Control Architecture for Model Management," *European Journal of Information Systems*, vol 2, no 1, 1993.

Chaturvedi, A.R., Hutchinson, G. K. and Nazareth, D. "A Synergistic Approach to Manufacturing Systems Control using Machine Learning and Simulation," *Journal of Intelligent Manufacturing*, Vol 3, pp. 43-57, 1992.

Chaturvedi, A.R., Hutchinson, G. K. and Nazareth, D. "A Synergistic Approach to Manufacturing Systems Control using Machine Learning and Simulation," *Journal of Intelligent Manufacturing*, Vol 3, pp. 43-57, 1992.

Jain, H.K. and Chaturvedi, A.R., "Expert System Problem Selection: A Domain Characteristics Approach," *Information and Management*, 17:4, 1989.

Chaturvedi, A.R. and G.K. Hutchinson, "Information Organization in Flexible Automation Systems," *Computers in Industry*, 9:4, 1988.

REFEREED CONFERENCE PROCEEDINGS

Armstrong, Brian, Day, C.F., and Chaturvedi, A.R., Forecasting the Impact of Policy Interventions on Societal Behavior, Proceedings of MODSIM World, March 2020, Norfolk, VA 23510.

Mohsen Moghaddam, C. Robert Kenley, Julia M. Colby, Marissa N. Berns, Randy Rausch, Joel Markham, Wesley M. Skeffington, John Garrity, Alok R. Chaturvedi, Abhijit V. Deshmukh, "Next-Generation Enterprise Architectures: Common Vernacular and Evolution Towards Service-Oriented," *INDIN 2017 : The 15th IEEE International Conference on Industrial Informatics*, July 24-26, 2017 - Emden, Germany.

Wan-Lin Hu, Janette Meyer, Zhaosen Wang, Tahira Reid, Alok Chaturvedi, Douglas Adams and Sunil Prabhakar, "Dynamic Data Driven Approach for Modeling Human Error," International Conference on Computational Science, Reykjavik, Iceland, June 2015

Chaturvedi, A.; Armstrong, B.; Snyder, D.; Everson, P.; Cibulskis, M. & Foong, C. M. Integrating Planning and Experimentation. In Proceedings of 2007 Spring Simulation Interoperability Workshop (SIW), March 25—27, 2007, Norfolk, VA, Paper 07S-SIW-070.

Chaturvedi, A.; Cibulskis, M.; Tham, Y. L.; Armstrong, B.; Snyder, D.; Everson, P. & Shreve, J. Integrating Planning and Experimentation. In Proceedings of 12th International Command and Control Research and Technology Symposium (ICCRTS), June 2007, Paper 240.

Chaturvedi, A.; Foong, C. M.; Armstrong, B.; Cibulskis, M.; Shreve, J.; Snyder, D. & Everson, P. Integrating PMESII Planning & Experimentation for Wargaming. In Proceedings of Modeling and Simulation World Conference (MODSIM), 2007, September 2007. Virginia Beach, VA.

Chaturvedi, A., "Society of Simulation Approach to Dynamic Integration of Simulations," *Winter Simulation Conference*, Monterey California, December 3-6, 2006.

Anderson, J., A. Chaturvedi, D. Lengachar, M. Cibulskis, "Modeling the Health of Refugee Camps: An Agent-based Computational Approach," *Proceeding of the 19th IEEE International Symposium on Computer-Based Medical System*, June 22-26, 2006, Salt Lake City, Utah.

Dev Niyogi, Gilbert L. Rochon, Krishna Madhavan, Rajarathinam Arangarasan, UC Mohanty, Alok Chaturvedi, Maruti Ram Ponaganti, Larry Biehl, Joseph E. Quansah and Hussam Nour. "Modeling, Visualization and Fusion of Archival Data to support Disaster Mitigation." *Geo-Informatics for Disaster Management (Gi4DM 2)*. Sept. 25-26, 2006, Goa, India.

Gilbert L. Rochon, Dev Niyogi, Krishna Madhavan, Rajarathinam Arangarasan, Alok Chaturvedi, Maruti Ram Ponaganti, UC Mohanty, Larry Biehl, Joseph E. Quansah and Hussam Nour. "Toward Intelligent and Sustainable Archiving of Geo-Spatial Data," *International Society for Photogrammetry & Remote Sensing (ISPRS) International Symposium on Geospatial Databases for Sustainable Development*. Sept. 27-30, 2006, Goa, India.

Lin, L., Kwon, S., Sharma, G., Mahulkar, V., Gul, K., Adams, D., Chaturvedi, A., Wasynczuk, O., and Shroff, N., "Modeling and Simulating Wireless Networks in Ship System of Systems: A Two-Level Approach," 2006, *Military Communications Conference*, Washington, D.C.

Chaturvedi, A.R., Dolk, D.R., and Chaturvedi, R., Armstrong, B., Foong, C.M., "Understanding Insurgency Using Agent Based Computational Experimentation," *Proceedings of Agent 2005*, University of Chicago, October 2005.

Foong, C., Armstrong, B., Dilley, D., Grahn, J., Krull, K., Chaturvedi, A., Gore, J., Filatyev, S. "Towards Enabling A Distributed And Scalable Society Of Simulations." *2005 Spring Simulation Multiconference (SpringSim '05)* (2005).

Chaturvedi, A.R., Dehncke, R.W., and Snyder, D.R., "Simulating Non-Kinetic Aspects of Warfare," *Interservice/Industry Training, Simulation, and Education Conference (IITSEC)* 2004.

Adams, D., Smith, M., Chaturvedi, A., Rotea, M., Hoffman, C., Craig, B., Venkatsubramanian, V., Mahmassani, H., Pines, D., Meliopoulis, S., and Busemeyer, J., "Integrated Prognostic System of Systems Health Management," *Proceedings of the Minerals, Metals, & Materials Society (TMS) Conference*, New Orleans 2004.

Chaturvedi, A. R., Chaturvedi, R., and Dolk, D. R., "Agent Based Modeling of International System," *Agent 2004*, University of Chicago, 2004.

Drnevich, P.L., Chaturvedi, A., Mehta, S., and Ramanujam, R. "Affiliation or Situation? Preferences in Coordinated Interorganizational Response To Bio-Terrorism," *Proceeding of the Academy of Management Conference*, 2004

Drnevich, P.L., Chaturvedi, A., Mehta, S., and Brush, T., "Strategic Decision Making Process Effectiveness: The Role of Choice in Responses to Bio-Terrorism." *Proceedings of SMS Conference*, 2004, Porto Rico

Chi, J., Chaturvedi, A. R., Grama, A., and Mehta, S. R., "Oceanus: A Distributed Web-based Framework for Execution of Genetic Algorithms," *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO-2002)*, New York, New York, July 2002.

Jaisingh, Jeevan and Chaturvedi, Alok, "Privacy and the Value of Information in Adverse Selection Markets," *Proceedings of the 5th International Conference on Electronic Commerce and Research (ICECR-5 2002)*, Montreal, Canada, Oct. 2002.

Jaisingh, Jeevan, Jack Barron, Chaturvedi, Alok, and Shailendra Mehta "Privacy on the Internet: An Economic Analysis," *Proceedings of the Americas Conference on Information Systems (AMCIS 2002)*, Dallas, Texas, August 2002.

Yu, Liang and Chaturvedi, A., "Competition between B2B Electronic Marketplaces: Differentiation, Pricing Strategy and Industrial Structure" *Americas Conference on Information Systems*, Boston MA, August 3-5, 2001. Received best paper award.

Dolk, D.R., J Scholl, A Chaturvedi, J Dickieson, "Agent-Based Simulation and System Dynamics," *Proceedings of the 34th Annual Hawaii International Conference on System Sciences (HICSS34)*, 2001.

Bandyopadhyay, S. and Chaturvedi, A., "Establishing a framework for market power in e-tailing: An empirical study," *Proceedings of the Hawaii International Conference on System Sciences (HICSS34)* 2001.

Chaturvedi, A. R., Gupta, M.K., Mehta, S. R., and Valeri, L., "Experimental Analysis of Information Security Management Issues for the Online Financial Services", *International Conference in Information Systems*, Brisbane, Australia, 2000.

Yue, W.T., Chaturvedi, A.R., and Mehta, S. R., "Is More Information Better? The Effect of Traders' Irrational Behavior on an Artificial Stock Market," *International Conference in Information Systems*, Brisbane, Australia, 2000.

Chaturvedi, A. R., Mehta, S. R., Gupta, M. K., and Valerie, L., "Information Security Issues for On-line Banking, *INET 2000*, The 10th Annual Internet Society Conference, Yokohama, Japan, 18-21 July 2000.

Chaturvedi, A. R., Mehta, S. R., Gupta, M. K., and Yue, W. T., "Agent-Based Simulation Approach to Information Warfare in the SEAS Environment" *HICSS minitrack on Agent-based Simulations*, January 2000.

Chaturvedi, A.R., Choudhary, V., and Tomak, K., "Effect of Network Externalities on Software Pricing", *HICSS Minitrack on Formal Aspects of Electronic Commerce*, January 1998.

Chaturvedi, A. R., Choudhary, V., and Tomak, K., "An Economic Model for Microrenting in Electronic Commerce," *AIS Conference*, Indianapolis, August 15-17, 1997.

Chaturvedi, A. R. and Gupta, S., "Distributed Transaction Processing: Scalability and Networking Issues," *Proceedings of the Association of Information Systems Conference*, Phoenix, Arizona, August 1996.

Chaturvedi, A. R., Garrod, S., and Lightner, N., "Visualization of Firms' Diversification Strategy," *Proceedings of the Association of Information Systems Conference*, Phoenix, Arizona, August 1996.

Bajaj, C.L., Chaturvedi, A. R., and Zhang, P., "Brokered Collaborative Infrastructure for CSCW," *Fourth Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises (WET ICE)*, April 20-22, 1995, Berkeley Springs, West Virginia, USA.

Chaturvedi, A.R. and Gulati, R.K., "Computational Ecology of Manufacturing Systems," *Workshop on Information Technologies and Systems*, Orlando, Florida 1993.

Chaturvedi, A. R., & Rich, J., "CSES: An Expert System for the design of Client/Server Computing," *Proceedings of the Information Technology Management Group's Eleventh Annual Conference*, Atlanta, Georgia, August 5 - 9, 1993.

Altinkemer, K. & Chaturvedi, A. R., "Neural Networks for Topological Design of Local Access Tree Networks," *Proceedings of the Telecommunication Systems Conference: Modeling and Analysis*, Vanderbilt University, Nashville, Tennessee, February 28 - March 3, 1993.

Chaturvedi, A. R and Gulati, R. K., "Adaptive Configuration Management for Manufacturing System Control," *Proceedings of the NSF Workshop on Intelligent, Dynamic Scheduling for Manufacturing Systems*, Cocoa Beach, Florida, January 25-27, 1993.

Chaturvedi, A. R and Gulati, R. K., "Cooperative Control Architecture," *Proceedings of the AAAI Workshop on Scheduling and Production Control*, San Jose, California, July 1992.

Chaturvedi, A.R., Hutchinson, G. K. and Nazareth, D. "FMS Scheduling Using Goal-Directed Conceptual Aggregation," *Proceedings of the Seventh IEEE Conference on Artificial Intelligence Applications*, Miami Beach, Florida, Feb 24-28, 1991.

Chaturvedi, A.R., "Expert System Problem Selection: An Innovation Management Perspective," *Proceedings of the 1990 ACM-SIGBDP International Conference on Trends and Directions in Expert Systems*, Orlando, Florida, 1990.

Chaturvedi, A.R. and G.K. Hutchinson, "FMS Scheduling: A Machine Learning Approach," *Proc. of AAAI-SIGMAN Workshop on Manufacturing Production Scheduling*, Detroit, Aug. 1989.

BOOKS

Amass, Bhunia, Chaturvedi, Peeta, Dolk, Attalah (Editors), *Advances in Homeland Security, Volume I: The Science of Homeland Security*, Purdue University Press, 2006.

Amass, Chaturvedi, Peeta (Editors), *Advances in Homeland Security, Volume II: Guiding Future Homeland Security Policy- Directions for Scientific Inquiry*, Purdue University Press, 2006.

BOOK CHAPTERS AND OTHER PUBLICATIONS

Chaturvedi, A., "Re-imagining the future – achieving prosperity in harmony with people and the planet," a Research Report submitted to Govt. of India, 2020.

Chaturvedi, A., and Armstrong, B., "Agent Based Simulation for designing and assessing Strategies for increasing post-secondary attainment in USA," a Research Report submitted to the Lumina Foundation, 2019.

Chaturvedi, A.R., and R. Chaturvedi, "Saksham Manufacturing-as-a-Service: A neo-Gandhian model of Entrepreneurship for the Masses, book chapter in "Globalizing Indian Thoughts," Sage Publication, 2020.

Yih, Y. and Chaturvedi, A., "Service enterprise modeling," in *Introduction to Service Engineering*, Salvendy, G., and Karwowski, W. (Editors), Wiley Press, 2009.

Chaturvedi, A.; Armstrong, B.; Snyder, D.; Everson, P.; Cibulskis, M. & Foong, C. M. Integrating Planning and Experimentation. In Proceedings of 2007 Spring Simulation Interoperability Workshop (SIW), March 25—27, 2007, Norfolk, VA, Paper 07S-SIW-070.

Chaturvedi, A.; Cibulskis, M.; Tham, Y. L.; Armstrong, B.; Snyder, D.; Everson, P. & Shreve, J. Integrating Planning and Experimentation. In Proceedings of 12th International Command and Control Research and Technology Symposium (ICCRTS), June 2007, Paper 240.

Chaturvedi, A.; Foong, C. M.; Armstrong, B.; Cibulskis, M.; Shreve, J.; Snyder, D. & Everson, P. Integrating PMESII Planning & Experimentation for Wargaming. In Proceedings of Modeling and Simulation World Conference (MODSIM), 2007, September 2007. Virginia Beach, VA

Alok Chaturvedi, Angela Mellema, Chih-Hui Hsieh, Tejas Bhatt, Mike Cheng, Eric Dietz, Simeon Stearns, "Decision Support for Security: A Mixed Reality Approach to Bio-terror Preparedness and Response," *Handbook on Decision Support Systems*, Burstein, F. and C. Holsapple (editors), Springer-Verlag, 2007.

Alok Chaturvedi, Angela Mellema, Sergei Filatyev and Jay Gore, "DDDAS for Fire and Agent Evacuation Modeling of the Rhode Island Nightclub Fire," *Lecture Notes in Computer Science*, Volume 3993/2006, Computational Science – ICCS 2006

Chaturvedi, A., R. Chaturvedi, M. Mulpuri, S. Mellema, "Modeling Stability and Reconstruction Operation using SEAS," *Cornwallis XI: Analysis for Civil-Military Transition*, April 2007.

Paul Drnevich, Alok Chaturvedi, and Shailendra Mehta, "Bio-terrorism Training Simulations: Implications for Effective Response," *Advances in Homeland Security, Volume II: Guiding Future Homeland Security Policy- Directions for Scientific Inquiry*, Amass, Chaturvedi, Peeta (Editors), Purdue University Press, 2006.

Chaturvedi, A.R., S. A. Filatyev, J. P. Gore, A. Hanna, J. Means, A. K. Mellema: Integrating Fire, Structure and Agent Models. *Lecture Notes in Computer Science, International Conference on Computational Science (2) 2005*: 695-702

Alok R. Chaturvedi, Jie Chi, Shailendra Mehta, Daniel R. Dolk, "SAMAS: Scalable Architecture for Multi-resolution Agent-Based Simulation. *Notes in Computer Science, International Conference on Computational Science, Volume 3038/2004*, 779-788

Bandyopadhyay, S., Chaturvedi, A., Barron, J, Rees, J, and Mehta, S., "Simulating Sellers' Behavior in a Reverse Auction B2B Exchange," in *Lecture Notes in Computer Science, Volume 2660/2003*, pp. 365-374.

WORKING PAPERS, ARTICLES UNDER REVIEW AND RESEARCH IN PROGRESS

Manuscripts Under Preparation

Chaturvedi, A. R., Armstrong B. Chaturvedi R., “Analyzing Federal and State Postsecondary Policies using The Sentient World Simulation.”

Chaturvedi, A., Esenduran, G., Nanda, G., “Manufacturing as a service.”

Chaturvedi, A., and Armstrong, B., “Deep Learning in Agent Based Simulation: Impact of Covid-19 on the US labor market.”

Chaturvedi, A., Chaturvedi, Armstrong B., Mining Strategies for Effective Deterrence of Adversarial Activities in Afghanistan.

Chaturvedi, A. R., Armstrong B. Chaturvedi R. Emergent Design of a Virtual International System in The Sentient World Simulation.

Chaturvedi, A. R., Armstrong B. Chaturvedi R. Analyzing Federal and State Postsecondary Policies using The Sentient World Simulation.

Chaturvedi, A.R., D. R. Dolk., and P. Drnevich, “Validating grounded theory building with Agent-based Simulations.”

Chaturvedi, A.R., “Modeling Mission Assurance under Cyber Risk.”

Chaturvedi, A.R., “Modeling the Impact of Cyber Attacks on a Firm’s Reputation Risk.”

Research in Progress

Hybrid Model for International Development

Mentor Investment Model for Social Impact

Factory on Wheels: Mobile Shared Manufacturing

Continuous Monitoring and Intervention Model using ICT4D

“Agent Based Simulation in the theatre of War: Lessons from Afghanistan and Iraq,” book under preparation.

PRESENTATIONS AND SEMINARS

“Entrepreneurship for the Masses,” Virtual Horasis India Meeting, 22 June 2020.

“Big Data and Artificial Intelligence,” Birla Institute of Technology, MESRA, Ranchi, India, July 2020.

“Cyber and Bio wars and the future of the world,” Future of life festival, April 2020.

“Re-Imagining the Future,” Raisina Dialog, New Delhi, Jan 2020.

“Keeping Social Media Regulation Free,” CyFy, New Delhi 2018.

“Manufacturing-as-a-Service,” University of Tennessee at Chattanooga, Sept. 2018

“Behavior Analytics,” King Abdullah University of Science and Technology, Jeddah, Saudi Arabia, November 2012

“Food Security and Defence,” Battelle Lab and Ohio State University, Columbus Ohio, July 2012

“Modeling Global Food Security,” Qatar Computing Research Institute, Doha, Qatar May 2012

“Reference World Information and Simulation Environment,” University of Notre Dame, March 2012

“Political, military, Economic, Social, Information, and Infrastructure Modeling,” NATO Workshop on Computational Modeling, Suffolk, VA, March 2007

“Service Oriented Architecture for Sentient World Simulation,” JFCOM Workshop on Sentient World Simulation, September 2007

“Synthetic Environment for Homeland Security,” US-Canada Border Trade Security Conference, Windsor Ontario Canada, October 2007

“Sentient World Simulation: A continuously running Model of the World,” Indian Institute of Management, Bangalore, November 2007

“Role of Memory in agent based modeling,” The Agent 2006 Conference on: Social Agents: Results and Prospects, Argonne National Laboratory -- The University of Chicago, Chicago.

“Validation and Verification of Agent-Based Modeling,” Military Operations Research Society Conference, Laurel, Maryland, 2006.

“Validation for Computational Experimentation: Replication of Violence in Maluku,” Army War College, Carlisle, PA, August 27-28, 2004.

“Synthetic Environment for the Analysis of Social and Behavioral Impact of Terrorism and Counter Terrorism,” ICATHS 2004, University of Connecticut, August 12-13, 2004.

“Individual Based Epidemiological Modeling Environment,” Princeton University, July 2002.

“Measured Response: Simulating Co-ordination of Response to a Bio-terror Attack during a Major Spectator Event,” NSF Conference on Deliberate Release of Biological Agents, DIMACS, Rutgers University, New Jersey, March 2002.

"Product, Market, and Supply-Chain Co-Design," invited speaker at e-business conference at University of Technology and Management at Rzeszow, Poland, May 9-11, 2001

"Business-to-business e-Commerce: The evolution of intermediaries in the PC Industry," Workshop on e-Business, Bloomington, Indiana, October 1999.

"Computational Models of Human Behavior: Experiments with Offensive and Defensive Cyber Crime Strategies," (with S. Mehta, M. Gupta, and L. Valarie), Aachen University, Germany, August 1999.

"Information Warfare using SEAS," Workshop on Information Warfare, Kings College, London, July, 1998.

"Business and Economic Simulation for Policy Development and Analysis," YUInfo Conference, Belgrade, March 1998.

"Visualization of Organizational Modeling," HCI Conference, San Francisco, CA August 1997.

"Scheduling of Transactions in a Real-Time TPS," INFORMS, Singapore, June 1995.

"Learning to Navigate in Virtual Environments," INFORMS, Singapore, June 1995.

"Navigation in Virtual Environments," INFORMS Spring Meeting, Los Angeles, CA, 1995

"Information Systems Strategies for Transnational Corporations," sponsored by Confederation of Indian Industries (CII), New Delhi, India, November 1994.

"Competing Globally through Information Technology," sponsored by Tata Consulting Services, Calcutta, India, November 1994.

"Virtual Environments for Business Decision Making," Nijenrode University, The Netherlands, October 1994.

"Visualizing Manufacturing Schedules," ORSA/TIMS Joint National Meeting, Detroit, Oct. 1994.

"An Architecture for Cooperative Control in Computer Integrated Manufacturing," AAAI Workshop on Intelligent Scheduling, San Jose, CA July 1992.

"Improving FMS Schedules through Implicit Learning," Workshop on Learning-based Scheduling Paradigms, University of Florida, Gainesville, 1992.

"Neural Nets for Topological Design of Local Access Tree Networks," (with K. Altinkemer and Hari Sankar), TIMS/ORSA Joint National Meeting, Anaheim, CA, 1991. Organized and chaired a session on Machine Learning.

"Time-Invariant Fragmentation," TIMS/ORSA Joint National Meeting, Nashville, TN, May 1991.

"Conceptual Aggregation of Models," TIMS/ORSA Joint National Meeting, Las Vegas, May 1990.

"Modeling the Extent of Knowledge in an Expert System," (with V. Mookerjee) TIMS/ORSA Joint National Meeting, New York, Oct. 1989.

"FMS Scheduling: A Machine Learning Approach," AAAI-SIGMAN, Detroit, Aug. 1989

"A Hybrid System for Scheduling," Expert Systems and the Leading Edge in P/OM Management Conference, Hilton Head, SC, May 1989.

"On Using Simulation to Test AI Models," (with G. K. Hutchinson) TIMS/ORSA Joint National Meeting, Vancouver, Canada. May 1989.

"CIM Technology Transfer: A Cross-Cultural Analysis," TIMS/ORSA Joint National Meeting, Washington DC, April 1988.

"Representation of Uncertain Data in Database Systems," TIMS/ORSA Joint National Meeting, Washington DC, April 1988.

"Information Flow in Automated Manufacturing Systems," National Bureau of Standards, Gaithersburg, Maryland, August 1987.

INVITED TALKS

"Re-Imaging the Future of Manufacturing," VAIBHAV, Global Summit of Overseas and Resident Indian Scientists and Academicians, Oct-Nov. 2020.

"Data Science for Social Good: Hybrid Development Model for Jharkhand," Ranchi, Jharkhand, India April 2018.

"Factory on Wheels: "Uberization" of Manufacturing," Ministry of Skill Development and Entrepreneurship, Delhi, September 2017.

"Behavior Anticipation and Shaping for Regional Peace and Social Integration," invited talk at Technical University of Tallin, Estonia, October 2016.

"Strategy Mining for Behavior Anticipation and Shaping for lowering after market service costs," Cummins Inc, Columbus, IN, September 2016.

"Strategy Mining for Behavior Anticipation and Shaping," The 3rd Gavriel Salvendy International Symposium on Frontiers in Industrial Engineering: Information Engineering, 2015.

“Saksham: Grassroots Entrepreneurship Program” Zamorano University Innovation Conference, Zamorano, Honduras, June 14-16, 2015.

“Saksham: Grassroots Entrepreneurship Program” Keynote talk at Colorado Innovation Summit (COIN 2015), August 24-26, 2015.

“Saksham in Bulgaria,” Saksham Inauguration meeting in Sofia Bulgaria, July 9, 2015.

“Inclusive Labor Policy for Saudi Arabia,” Ministry of Labor, Kingdom of Saudi Arabia, Riyadh Jan 16, 2015.

“Project Saksham in India,” Invited to speak at USAID conference on m-education, Washington DC, September, 2015.

“Technologies for Regional Peace and Social Integration,” invited to Speak at Technical University of Tallin, Estonia, February 2014.

“Understanding Zero-Day Cyber Attack,” invited talk at Credit Suisse, New York City, New York, October 2012.

“Global Cyber Risk Intelligence,” invited talk at Goldman Sachs, New York City, New York, July 2012.

“Modeling Response and Recovery from a Catastrophic Terrorist Attack,” invited talk at University of California, San Diego, March 2011

“Behavior Analytics for Healthy Society,” keynote speaker at Indiana Take Charge, Take Action, October 2010

“SEAS-VIS Lessons from Afghanistan Deployment,” invited to speak at NATO Irregular Warfare Conference, Munich, Germany 2009

“Synthetic Environment for Analysis and Simulation,” invited talk at National Science Foundation Workshop on Dynamic Data Driven Application System, Arlington, VA, 2008.

Invited panelist at INFORMS 2006 conference, Pittsburgh, PA.

Invited Panelist at Workshop on Information Technology and Systems (WITS) 2006, Milwaukee, WI.

Invited Panelist for MORS 2006 Spring Symposium on Modeling and Simulation, Laurel, MD.

Invited talk at the Sentient World Simulation Workshop, Norfolk, VA 2006.

Invited talk at the Argonne National Lab.

Winter Simulation Conference, Monterey CA, 2006.

Invited talk at the Enterprise Resiliency Workshop, NASDAQ, New York, New York.

“Synthetic Environment for Analysis and Simulation – Virtual International System,” invited talk at University of Pennsylvania.

“Synthetic Environment for Analysis and Simulation – Virtual International System,” invited talk at Air Force Research Laboratory, Rome, New York.

“Whole of Nation Approach to Effects Based Operation,” invited talk at the Military Operations Research Society (MORS) Conference.

Department of Human and Health Services, Science and Technology Advisor of the Secretary.

Invited talk at the Carlson School of Business, University of Minnesota,.

The National Academies, The Computer Science and Telecommunications Board at the National Academy of Science committee on Using Information Technology to Enhance Disaster Management, September 2005.

USAID, The Bureau for Democracy, Conflict, and Humanitarian Assistance (DCHA), 2004

Director of Center for Disease control (Bio-Defense), CDC, Atlanta, August 2003.

Council of Economic Advisors, Executive Office of the President, the White House, October 2003.

Assistant Secretary of the Army (Acquisition, Logistics & Technology), The Pentagon, 2003.

Director of the Office of Science and Technology Policy Office, Executive Office of the President, the White House, May 2002.

Science and Technology Advisor to Joint Forces Command, Suffolk, Va, 2002

Secretary of the Navy’s Strategic Studies Group, The Pentagon, 2002.

Commanding General of the US Army Accession Command, Fort Knox, Ky, 2001.

EDITORIAL BOARD AND EDITORSHIP

Guest Associate Editor, MIS Quarterly

Editorial Board of Journal of the Association of Information Systems, 2003-2006

Guest Associate Editor of Management Science

Associate Editor, International Conference on Information Systems, 2003

JOURNALS REVIEWED FOR

MIS Quarterly

Information Systems Research

INFORMS Journal of Computing

Decision Sciences

Decision Support Systems

Expert Systems with Applications: An International Journal

IEEE Computer

Journal of Intelligent Manufacturing

Management Science
IEEE Visualization

TEACHING INTERESTS

Data Science for Social Good
Big Data Technologies
Enterprise Resiliency
Enterprise IT Strategies
IT for e-business
Internet and "Active" Systems Development
Enterprise Integration
Business Intelligence and Data-mining
Decision Support and Intelligent Systems
Agent based modeling of supply chain

COURSES TAUGHT

Big Data Technologies
Data Science for Social Good
Data Driven Approach to Policy
Information Technology for e-business
Enterprise Integration with SAP
Synthetic Environments and Business Simulations
Virtual Environments and Business Visualization
Management of Enterprise Information Systems (at Undergraduate, MBA and Executive levels)
Doctoral Seminar on Visualization and Synthetic Environments, Information Economics, Machine Learning, Databases
Database Management Systems
Object-Oriented Analysis and Design for Client/Server Systems
Decision Support and Expert Systems

PH.D. STUDENTS ADVISED

Major Professor:

Evalyn Henderson

Sharad Barakataki

Liang Yu

Jeevan Jaisingh, HKIST

Mukul Gupta, University of Texas, San Antonio