

## **ALOK R. CHATURVEDI**

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Krannert School of Management

Purdue University

West Lafayette, Indiana 47907



### **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

- 2022 - 2023 Area Coordinator, MIS  
2018 - 2019 Area Coordinator, MIS  
2013 - Director, Institute for Social Empowerment through Entrepreneurship and Knowledge (ISEEK)  
2006 - Professor, Daniels School of Business  
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.

#### Entrepreneurship

- 1999 - 2013 Founder, Chairman, and Chief Executive Officer, Simulex Inc. (exit through acquisition).  
2009 – 2013 Founder, Chairman, and Chief Executive Officer, Knowrtl, LLC (exit through acquisition).  
2013 - Mentor, Money Lion Inc. (exit through IPO in Sept. 2021)  
2021 - CTO, Partner, AgHeal Global, LLP (Social Empowerment through Technology).  
2022 - CTO, Qu-Life, LLC (Quantum Digital Twin)

#### Global Services

- 2022 - 2023 Member, G20 Task Force on “Global Governance with Lifestyle for Environment (LiFE), Values, and Wellbeing.”

## RESEARCH INTERESTS

Quantum Computing; Artificial General Intelligence and Generative Artificial Intelligence; Predictive Analytics; Sentient World Simulation; Computational Models of Human Behavior; Agent-based Modeling and Simulation; Realtime Health Analytics, Hybrid Green Bond Exchange, Cyber-Physical-Mental Quantum Entanglement, Social Empowerment through Entrepreneurship and Knowledge; Data Science for Social Good; Machine Learning; Big Data and Predictive Analytics; Data Science for National and Homeland Security; Manufacturing-as-a-service; Counterterrorism, Preparedness and Response; and Bio-terrorism and Individual-based Computational Epidemiology.

## AWARDS AND RECOGNITIONS

**National Training and Simulation Association (NTSA) Lifetime Achievement Award (2024)** -- for Dr. Chaturvedi's transformative contributions to the field of modeling and simulation, his pioneering role in advancing agent-based approaches, and his groundbreaking work in integrating quantum computing and Gen AI into simulation methodologies.

**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 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.

**COMPETITIVE GRANTS**

Chaturvedi, A.R., Co-PI and Purdue lead for “Open Science Platform for Alzheimer’s Disease and other Related Dementia,” (2024). A proposal to National institute for Health, for funding of nearly \$1 Million over 3 years. Status: **Funded**.

Chaturvedi, Alok R., "Quantum Sentient World Simulation for Infrastructure and Human Survivability under Nuclear attack," in partnership with Noblis, Inc. 2002 Edmund Halley Dr. Reston, VA 20191. (July 1, 2024 – June 30, 2029), \$600,000/year IDIQ, pending.

Chaturvedi Alok. R, (Co-PI), “quantum Sentient Environment for Enhancing Resilience (q-SEER) for Sustainable Animal Agriculture,” Ardekami, A., Beauvais, W., Mittal, S., and Varma, M. Co-PIs, **funded** \$100,000 by Purdue University Ag2030 Challenge Program, 2022.

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 21<sup>st</sup> 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 Defense (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 21<sup>st</sup> 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.

## BOOKS

Chaturvedi, Alok R., *Dharma of AI: Timeless Wisdom for Digital Ethics*, in print, Purdue University Press, December 15, 2025.

Chaturvedi, Alok R., *Primordial Code: Data, Models, and Artificial Intelligence*, under preparation.

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.

## REFEREED PUBLICATIONS

Ritika R. Chaturvedi, Marco Angrisani, Wendy M. Troxel, Monika Jain, Tania Gutsche, Eva Ortega, Adrien Boch, Citina Liang, Shiyang Sima PHD, Aziz Mezlini, Eric J. Daza, Miad Boodaghizaji, Sze-chuan Suen, Alok R. Chaturvedi, Hossein Ghasemkhani, Arezoo M. Ardekani, Arie Kapteyn, "American Life in Realtime: benchmark, publicly-available person-generated health data for equity in precision health, PNAS Nexus, 2025.

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

Busemeyer, 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

Alok Chaturvedi and Ilango Guru Muniasamy, "Beyond Rationality and Noise: Understanding DeFi User Behavior through Quantum Decision Theory," ICIS 2025, Nashville, TN, Dec. 2025

Shiyang Sima, Ritika Chaturvedi, Hossein Ghasemkhani, and Alok Chaturvedi, Data-Driven Early Detection of Infectious Disease Symptoms Using Wearable Sensor Data: A Transformer-Based Unsupervised Approach, *Dynamic Data Driven Application Systems Conference*, December 2024.

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 19<sup>th</sup> 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., Meliopoulos, 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 AAI 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 AAI-SIGMAN Workshop on Manufacturing Production Scheduling*, Detroit, Aug. 1989.

## **BOOK CHAPTERS AND INVITED PUBLICATIONS**

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, 2021.

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.

## **OTHER PUBLICATIONS**

Chaturvedi, A. R., & Chaturvedi, R. (2021). Writing on the Wall: What to do with Opium Trade? [https://medium.com/@rc\\_2798/part-ii-this-article-is-the-continuation-to-our-insights-into-afghanistan-from-eighteen-month-4e939c4576e2](https://medium.com/@rc_2798/part-ii-this-article-is-the-continuation-to-our-insights-into-afghanistan-from-eighteen-month-4e939c4576e2).

Chaturvedi, A., & Chaturvedi, R. (2021). Writing on the Wall: Insights into Afghanistan from Eighteen-month Field Experiment. Medium.com., [https://medium.com/@rc\\_2798/writing-on-the-wall-our-insights-into-afghanistan-from-eighteen-month-field-experiment-part-i-4419182c1418](https://medium.com/@rc_2798/writing-on-the-wall-our-insights-into-afghanistan-from-eighteen-month-field-experiment-part-i-4419182c1418).

## **WORKING PAPERS, ARTICLES UNDER REVIEW AND RESEARCH IN PROGRESS**

### Manuscripts Under Review

Chaturvedi, Alok R., "Non-Dual Data Theory for Quantum Optimization of Management Decisions," submitted to *Journal of Optimization*, 2026

Chaturvedi, A., & Guru Muniasamy, I. "Designing Resilient Stablecoin Operations: A Welfare-Optimal Mechanism for Digital Liquidity Crises." submitted to *Management Science*, 2025.

Chaturvedi, A. "Dynamic Strategic Entropy: Measuring Focus, Flexibility, and Commitment in Corporate Portfolios," submitted to *Strategy Science*, 2025.

### Manuscripts Under Preparation

Chaturvedi, A., Guru Muniasamy, Ilango., “Designing Stable Decentralized Markets for Stablecoins: A Thermodynamics-Inspired Mechanism,” in revision for submission to *Management Science*, 2026.

Chaturvedi, Alok, The Unified Decision Field: A Dynamic Theory of Strategic Evolution, in revision for submission to *Strategy Science*, 2026.

Chaturvedi, Alok, “Society of Agents: A Quantum-Inspired Framework for Emergent Multi-Agent Coordination,” in preparation for submission to *ACM Transactions on Autonomous and Adaptive Systems*, 2025

Chaturvedi, Alok, “Quantum-Inspired Information Fields: A Measurement-Driven Approach to Emergent Multi-Agent Coordination,” *in preparation*, 2026.

Chaturvedi, Alok, “Semantic Measurement Operators: LLMs as Universal Liaisons in Multi-Agent Systems,” *in preparation* 2026.

Burcu, T. E, Chaturvedi, A., Esenduran, G., & Nanda, G “Manufacturing as a Service: Bringing Job Opportunities to the Base of the Pyramid ,” in revision for submission to *Manufacturing & Service Operations Management*, 2026

Chaturvedi, A and Drnevich, P., “A Framework for Quantum-Enhanced Strategic Decision Making with Large Language Models,” in preparation 2026

Sima, S., Ghasemkhani, H., Chaturvedi, A. R., M., Ardekani, A., & Chaturvedi, R (PI). “Anomaly Detection Transformer: A Novel Approach for Time Series Analysis of Wearable Health Data.” In preparation for submission to Nature Digital Medicine

Sima, S., Ghasemkhani, H., Chaturvedi, A. R., M., & Chaturvedi, R (PI), “Inclusive Digital Health Information Systems: An Architecture for Representative Population Health Research,” Information Systems Research

Sima, S., Chaturvedi, Alok R., & Chaturvedi, R (PI), “A Quantum-Enhanced Framework for Multi-Level Hierarchical Optimization: A Theoretical Analysis,” in preparation

### **PRESENTATIONS AND SEMINARS**

"Modeling Cognition in Artificial Agents on a Quantum Computer," University of Pennsylvania, Mar 2022.

Enterprise Resiliency Workshop, "Enterprise Resiliency in Post Pandemic world," NASDAQ, New York, NY, United States September 2021.

Chaturvedi, A. R. (Author), "Re-Imaging the Future of Manufacturing," Harappa University. (March 2021).

“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," AAI 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," AAI-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**

"Entrepreneurship for the Masses," Prime Minister's Vaibhava Summit, Virtual Workshop 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

## **LEARNING**

### **TEACHING INTERESTS**

Quantum Information Processing  
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 in the Cloud  
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:

##### Current Students:

Shiyang Sima (Department of Management, MIS) Dissertation (June 2022 - 2025),  
Committee Chair

Qinqin Zhou (Computer and Information Technology) Dissertation Committee Co-  
Chair

##### Past Students:

Ilango Guru Muniyasamy (Department of Management, MIS) Dissertation (completed  
August 2024), now an assistant professor at University of South Florida.

Evalyn Henderson

Sharad Barakataki

Liang Yu

Jeevan Jaisingh, HKIST

Mukul Gupta

Shubhajyoti Bandyopadhyay, University of Florida

Wei T. Yue, HKIST.

Vidyanand Choudhary, University of California, Irvine

Nancy Lightner, VA Simulation Center.

Samir Gupta, ORIX Corporation, New York, New York.

Radha Mookerjee, (Co-Chair), University of Texas, Dallas.

J.S. Roan, National Chung Cheng University, Taiwan.

#### Committee Member:

Nikhil Nayanar, IE

Sean McKay, Mechanical Engineering

Vishal Mahulkar, Mechanical Engineering

P. (Frank) Nitithamyong, Construction Engineering and Management

Karen Tomak, MIS

Indranil Bose, MIS.

Paul Beckman, MIS.

S. Kondareddy, MIS.  
B. Kim, MIS.  
Peinan Zhang, Computer Science.  
Rajesh Piplani, Industrial Engineering.  
Scott Moses, Industrial Engineering.  
James Chu, Industrial Engineering.  
Charles Trappey, Consumer Sciences and Retailing.  
Dan Worobetz, Management Science.

## ENGAGEMENT

### **Institute for Social Empowerment through Entrepreneurship and Knowledge (ISEEK)**

Purdue University's Institute for Social Empowerment through Entrepreneurship and Knowledge (ISEEK) aims to empower under-privileged and poverty-stricken young people in the world. It achieves its goal through innovative and technology-enabled approaches to entrepreneurship education and on-the-job training leading to prosperity. It provides participants with continuous access to *knowledge, the market, capital, and talent*. *Project Saksham*, ISEEK's flagship project, employs a reimagined *Hybrid Development Model* consisting of four stages: (1) the development stage in which a self-help group (SHG) begins with extensive education and training related to business, health, and vocational skills; (2) the transformation stage, in which an SHG transforms into a small business by formally registering the company, learning to manage the business on the *Daksh Business Platform*, acquiring capital through investors and MUDRA bank, and doing business over the *Daksh e-Marketplace*; (3) the startup stage, in which the small business operates independently in the free market; and (4) the growth stage, in which successful companies, with the help of global investors, become a formal enterprise competing in the global markets. The overall objective of Project Saksham is:

*To empower the youth of the world (especially women) by providing technology-enabled entrepreneurship education and training, and by facilitating the creation of over 1 million companies in 10 years, thereby employing over 10 million "business owners" and reaching 50 million beneficiaries.*

### **Global Policy Research Institute (GPRI)**

As the Global Affairs Fellow, Dr. Chaturvedi is responsible for directing GPRI's academic activities. Specifically, through interdisciplinary research, data-driven policy analysis, education and outreach GPRI bridges the gaps in understanding among the academic, policymaking communities, and the public. Dr. Chaturvedi developed programs to:

- *Prepare students* by training them in technologies, tools, and processes for data-driven analysis for policy; creating opportunities for internships and interaction with leaders from corporations, government agencies, and think tanks.
- *Mentor faculty* through Purdue Policy Network and Shaping the Conversation thematic dinners.
- *Create resources* such as databases for policy analysis, Purdue policy methodology, and courses and certificate programs in policy analysis

- *Build partnerships* with national and international think tanks such as RAND Corporation, Chatham House for collaborative activities.

### **Purdue Homeland Security Institute (PHSI)**

Dr. Chaturvedi was the founding director of Purdue Homeland Security Institute (PHSI). Under his directorship, PHSI comprised of three centers: The Center for Computational Homeland Security; The Center for Sensing Science and Technology; and the Center for Security of Large-Scale Systems. The mission of the Institute was threefold. The first was to fulfill educational and training needs of Homeland Security professionals. The second was to accelerate the discovery, validation, and implementation of new knowledge and tools for sustainable homeland security. The third was to engage with key stakeholders in meeting the challenges associated with Homeland Security. The Institute's areas of research included: Bio Security, Sensor Technologies, Infrastructure Security, Economic Security, Cyber Security, Power Grid Security, and Food and Plant Security.

- **Cyber Security Wargame (1997-2012):** The original information warfare game was developed in collaboration with the Institute of Defense Analyses (IDA), Alexandria, VA, in 1997. Ever since, we developed several Cyber Security simulations & games, including – information assurance vs. disaster recovery trade-off modeling; mission assurance modeling; cyber intelligence and reputation risk.
- **Food Security and Defence (2005 – 2012):** SEAS-FDS is a food defense simulation of a post-harvest food supply chain developed using the Synthetic Environment for Analysis and Simulation (SEAS). SEAS-FDS is used to teach/train students/professionals in the concepts of resilience in food supply chain. SEAS-FDS enables one to learn by doing in a virtual, risk-free environment that replicates real situations by: (a) creating a synthetic economy that replicates the real marketplace and its entities, (b) using real and current data with high numbers of variables, (c) simulating critical interactions among entities (d) involving multiple human and artificial players (protagonists and antagonists), and (e) being flexible and adaptable to a wide range of contexts.
- **Measured Response (2002 – 2006):** Measured Response simulated a bio-terrorist attack during a major spectator event and the actions of the responders at the local, state, and federal levels. It used millions of artificial agents to model the behavior such as mobility, emotions, and epidemiology of the citizens of United States. The 2002 Measured Response was one of the first applications to use distributed high-performance computing (cloud computing) in interactive and realtime manner. Senior officials and executives from the following agencies and companies participated: Office of Homeland Security, FBI, CDC, NIH, NSF, Institute for Defense Analyses, Sandia National Laboratory, National Guard, Coast Guard, Indiana Counter Terrorism and Security Council, Indiana State Department of Health, Indiana Department of Transportation, State Emergency Response Agency, Local Police and Fire Chieftains, Mayor, Red Cross, IBM, Eli Lilly, Abbott Labs, Intel, and Ford. Undersecretary of Department of Homeland Security for Science and Technology, Mr. Charles McQueary attended 2004 and 2005 events.

Research and discovery Support in Homeland Security: involved nearly 200 faculty across campus, from all disciplines, were affiliated with PHSI. Funded projects total over \$20M including center awards for Computational Homeland Security (21st Century: \$2.2M/Chaturvedi), Security of Large-Scale Systems (AFRL/PCKA: \$1.1M/Wasynczuk), and the Enhanced Techniques for the Detection of Explosives (Crane: \$805,000/Kim).

Organized Indiana-wide workshop on:

- Modeling and Simulation
- Sensors and Sensor Network
- Social and Behavioral Impact of terrorism

Interdisciplinary, Graduate Courses in Homeland Security: developed a campus-wide, interdisciplinary, Masters Area of Specialization in Homeland Security as well as a short-course certificate program.

Hoosier Readiness Challenge: developed and executed table-top and full-scale emergency response exercises for 2 homeland security districts in the State of Indiana.

Southern Indiana Bioterrorism Attack and Defense (SINBAD): provided a computational model and simulation in support of a full-scale exercise for Indiana DHS District 9 and the Louisville Metropolitan areas.

Muscatatuck Urban Training Center Project: Integrated a mobile C4ISR architecture into the Muscatatuck Urban Warfare Training Center used to track, trace, monitor, record, and evaluate military and homeland security full-scale exercises.

Desktop Drills to Test Pandemic Influenza Plans: tested the Pan Flu plans of each Indiana District using a web-based methodology.

Local Public Health Coordinator Pan Flu Drill and Tabletop Program: developed a complete pandemic exercise preparedness program for the Indiana State Department of Health, the 94 local public health departments and associated government agencies responding to a pan flu crisis.

Eta Sigma Iota: Started a National Homeland Security Student Organization

K-12 Educational Programs: developed a homeland security program at Penn-Harris-Madison School Corporation.

#### Conferences

- Joint annual PHSI/Regenstrief Center for Healthcare Engineering Conference
- Joint PHSI/Bioanalytical Systems Incorporated Conference

#### **Purdue e-business Research Center (PERC)/Indiana Consortium for e-business Research (ICER)**

Dr. Chaturvedi founded Purdue e-Business Research Center (PERC) in 1997. The center was also the hub for Indiana Consortium for e-Business Research (ICER) between 2000-2005 when it received a major grant from Indiana 21<sup>st</sup> Century Research and Technology fund. PERC and ICER further developed the SEAS, the agent-based simulation platform to study variety of e-Business related problems using their innovative hybrid human-computational experimentation paradigm. Some of the major experiments conducted were:

- **RecruitSIM:** Conducted Strategic Planning Wargame for the Commanding General of US Army Recruiting Command and his Brigade Commanders at Fort Knox, Ky. During this exercise the brigade commanders investigated different recruiting strategies to meet the challenges that they will face in the future when the army transformation process is implemented.
- **Project Neptune:** Conducted a war game for US Naval Air Command, NAVAIR Base, Pax River, MD. This exercise highlighted the need for selecting the right e-business model in order to maintain the high level of readiness while dramatically lowering the inventory levels for both peace time and war time scenarios.

- **FirmHandshake:** A recruiting and training game to help the US Army to formulate strategy for hiring, training, and retaining soldiers with high mental capability, Washington DC.
- **Acquisition Live Case** at U.S. Navy Acquisition Center for Excellence, Washington DC. This exercise enabled the DoD leadership to explore the issues related to e-business.

## **OTHER PROFESSIONAL ACTIVITIES**

Technical lead for US Joint Forces Command's Sentient World Simulation (SWS) initiative (2005-2009). SWS, a continuously running, continually updated model of the world that was supported by peta-scale computation and storage environment. Based on the Synthetic Environment for Analysis and Simulations (SEAS), SWS mirrored the real world in all its key aspects—Political, Military, Economic, Social, Information, and Infrastructure. SWS was designed to sense and react to actual events as they occur anywhere in the world and predict likelihood of future events and evaluate outcomes of courses of actions

Member of a Virtual Institute for Advanced Modeling, involving eight research institutes worldwide, 1994-1998.

Organized the Workshop on Simulation Based Acquisition at the Institute for Defense Analyses, November 19, 1998, Washington D.C.

Co-chaired the Workshop on Synthetic Economies at the Institute for Defense Analyses, July 23-24, 1997, Washington D.C.

Member of Program Committees of several IS conferences.

Offered several courses on Client/Server Computing and Object-Oriented Analysis and Design in Chicago, Milwaukee, and Washington D.C.

"Client/Server Computing: Using Information Technology Productively," a series of two-day workshops at Siemen's, Erlangen, Germany and at Bangalore, Bombay, and New Delhi, India, July-August 1992.

Organized the "Enterprise Integration: New Competitive and Organizational Landscapes," conference at Purdue University, September 20-21, 1993.

Cluster Chair for Artificial Intelligence Track for the TIMS/ORSA Joint National Meeting, Phoenix, Arizona, November 1-3, 1993.

Member of the Association of Computing Machinery, American Association for Artificial Intelligence, The Institute of Operations Research and Management Science (INFORMS).

## **INTERDISCIPLINARY RESEARCH ACTIVITY**

Dr. Chaturvedi is the Director of Purdue's Institute for Social Empowerment through Entrepreneurship and Knowledge (ISEEK).

Dr. Chaturvedi was the founding Director of Purdue Homeland Security Institute. PHSI has our sub centers – Center for Computational Homeland Security; Center for the Security of Large-Scale Systems; Center for Sensing Science and Technology.

Dr. Chaturvedi chaired the Purdue's Cyberinfrastructure Advisory Committee. The report from the committee directly resulted in establishment of Cyber Center at Purdue Discovery Park.

Dr. Chaturvedi is the inaugural Director of Purdue e-Business Research Center.

Dr. Chaturvedi is the inaugural Director of Indiana Consortium for e-Business Research.

Dr. Chaturvedi is a charter member of Purdue's Computing Research Institute.

Dr. Chaturvedi is a charter member of Center for Wireless Systems and Applications.

Dr. Chaturvedi is actively involved with Purdue's Center for Education and Research on Information Assurance and Security (CERIAS) on information security research and education.

Dr. Chaturvedi helped establish Purdue's Center for Computational Image Analysis and Visualization as a charter member.

## INNOVATION AND ENTREPRENEURSHIP

- 1999 – 2013     Simulex, Inc.  
As the Founder and the Chief Executive Officer of the company, Dr. Chaturvedi developed one of the most advanced agent-based simulation environments. Simulex's clients list include fortune 500 companies, an Asian wireless communication company, US Army Accession Command, Naval Air Command, and Joint Forces Command, Governments of UK, France, Germany, Sweden, Australia, and Saudi Arabia. He successfully exited the company in 2013.
- 2009 – 2013     Knowrtal, LLC.  
As the sole founder of this big data analytics company, Dr. Chaturvedi developed a revolutionary peta scale, artificially intelligent platform that allow users to create complex mash-ups representing multiple aspects of their respective world views by combining data, research, experience, and expertise in a collaborative manner. Knowrtal employed 10 software engineers. Its customers included Fortune 500 companies and US Government. He successfully exited the company in 2013.
- 2010 – 2013     ZeroAge, LLC.  
As a co-founder of this health and well-being analytics company, Dr. Chaturvedi developed all platform social games and "digital buddy" products based on behavioral change analytic engine that incorporates research from positive psychology, sociology, behavioral economics and neuroscience to deliver innovative strategies for individuals, groups and organizations to achieve superior health outcomes at a low cost. ZeroAge employed 12 people. Primary customers were Fortune 500 companies. He successfully exited the company in 2013.
- 2013 – 2021     MoneyLion  
As a mentor for this FinTech Company, Dr. Chaturvedi guided the company from ideation to its IPO in September 2021.
- 2021 --            EntelMed  
As a mentor for the TeleMedicine Company, Dr. Chaturvedi is helping this company get off the ground.
- 2021 -             CTO, Partner, AgHeal Global, LLP (Social Empowerment through Technology).

2022 - CTO, Qu-Life, LLC (Quantum Digital Twin)

2022 -- Miden Exchange (Midex)  
As a mentor for a hybrid (tokenized and traditional) Green Bonds exchange Company, Dr. Chaturvedi is helping them develop a smart contract for the Ethereum infrastructure.

## **HONORS**

Appointed technical lead for US Department of Defense Sentient World Simulation initiative.

Invited talk at the Council of Economic Advisors of the White House.

Invited talk at the Director of Science and Technology Policy Office of the White House, May 2002.

Invited talk at the Strategic Studies Group of the Secretary of the Navy, Pentagon, September 2002.

Invited talk at the Science and Technology Advisor to Joint Forces Command, Suffolk, September 2002.

Invited talk at the Assistant Secretary of the Army (Science and Technology), Pentagon, February 2002.

## **HOBBIES**

Tennis, Cricket, Golf, and Bridge.