

Prakash P. Shenoy



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Biographical Sketch

Prakash P. Shenoy is the Ronald G. Harper Distinguished Professor of Artificial Intelligence in Business, University of Kansas at Lawrence. He received a B.Tech. in Mechanical Engineering from the Indian Institute of Technology, Bombay, India, in 1973, and an M.S. and a Ph.D. in Operations Research/Industrial Engineering from Cornell University in 1975 and 1977, respectively.

His research interests are in the areas of artificial intelligence and decision sciences. He is the inventor of *valuation-based systems*, an abstract framework for knowledge representation and inference that includes Bayesian probabilities, Dempster-Shafer belief functions, Spohn's kappa calculus, Zadeh's possibility theory, propositional logic, optimization, solving systems of equations, database retrieval, and other domains. He is also the co-author (with G. Shafer) of the so-called Shenoy-Shafer architecture for finding marginals of joint distributions using local computation. He has published many articles on management of uncertainty in expert systems, decision analysis, and the mathematical theory of games. His articles have appeared in journals such as *Operations Research*, *Management Science*, *International Journal of Game Theory*, *Artificial Intelligence*, and *International Journal of Approximate Reasoning*. He has received several research grants/contracts from the Database and Expert Systems (DES), and Decision, Risk and Management Science (DRMS) programs of the *National Science Foundation*, the Research Opportunities in Auditing program of the *Peat Marwick Main Foundation*, the Higher Education Academic Development Donations program of *Apple Computer, Inc.*, the Information Sciences Department of *Hughes Research Laboratories*, *Space Dynamics Laboratory* of Utah State University, *Information Extraction and Transport, Inc.*, *Science Applications International Corp.*, *Sparta, Inc.*, *Raytheon Missile Systems, Inc.*, *Lockheed Martin Space Systems Company*, and *American International Group, Inc.*

He serves as an Associate Editor of *International Journal of Approximate Reasoning*, and as an ad-hoc referee for over 30 journals and conferences in Artificial Intelligence and Management Science/Operations Research. He has served as an Area Editor for *International Journal of Fuzziness and Knowledge-Based Systems*, as an Associate Editor of *Operations Research*, as an Associate Editor of *Management Science*, as Program Co-Chair of the *Thirteenth Conference on Uncertainty in Artificial Intelligence* held at Brown University, Providence, 1997, and as Conference Chair of the *Fourteenth Conference on Uncertainty in Artificial Intelligence* held at University of Wisconsin-Madison in 1998.

His teaching interests are in the areas of uncertain reasoning, decision analysis, and statistics. He has taught undergraduate and graduate courses on linear programming, non-linear programming, game theory, management information systems, decision support systems, uncertain reasoning, probability, statistics, multivariate statistics, supply chain modeling & optimization, and data analysis & forecasting. He has served on doctoral dissertation committees of forty Ph.D. students in Management Science, Marketing, Accounting, Economics, Electrical Engineering and Computer Science, Geography, Civil Engineering, and Philosophy, twelve as chairperson. He has received the Outstanding Mentor Award from the Association of Business Doctoral Students five times, an Excellence in Teaching Award from the Center for Teaching Excellence, and an Outstanding Mentor Award from the Graduate and Professional Association of the University of Kansas.

In Summer 2012, with the help of Dean Neeli Bendapudi and his colleagues in Decision Sciences, Marketing, and Finance, he formed the *Center for Business Analytics Research* (CBAR). In Fall 2013, DST Systems, Inc. joined CBAR as a founding corporate sponsor. In Spring 2015, AIG, Inc. joined CBAR as a corporate sponsor. He and Steve Hillmer currently serve as the academic faculty Directors of CBAR.

Education

- Ph.D. Cornell University, Ithaca, N.Y., 1977, in Operations Research (with minors in Computer Science and Statistics)
- M.S. Cornell University, Ithaca, N.Y., 1975, in Operations Research
- B.Tech. Indian Institute of Technology, Bombay, 1973, in Mechanical Engineering

Professional Education in Management Information Systems

Faculty Internship in Management Information Systems, Hallmark Cards, Inc., July 1–December 31, 1986

Intra-University Visiting Professorship, Department of Computer Science, University of Kansas, August 1985–May 1986

Information Systems Faculty Development Institute, American Association of Collegiate Schools of Business and University of Minnesota, July 8–August 10, 1984

Employment

Ronald G. Harper Distinguished Professor of Artificial Intelligence, University of Kansas School of Business, July 1994 onwards.

Visiting Professor, Université de Technologie de Compiègne, France, January–April 2019.

Visiting Professor, Dept. of Statistics and Applied Mathematics, University of Almeria, Almeria, Spain, January–May 2011.

Visiting Professor, Dept. of Computer Science, Aalborg University, Denmark, January–May 2004.

Visiting Professor, University of Fribourg, Switzerland, January–May 1996.

Director of the Doctoral Program in Business, University of Kansas School of Business, 1991–95

Professor of Business, University of Kansas School of Business, 1988–94

Associate Professor of Business, University of Kansas School of Business, 1982–88
Assistant Professor of Business, University of Kansas School of Business, 1978–82
Research Scientist, Mathematics Research Center, University of Wisconsin at Madison,
1977–1978

Honors and Awards

Mentor Award, Association of Business Doctoral Students, School of Business, University of Kansas, 2009.
Member of Phi Beta Kappa, Alpha chapter of Kansas, University of Kansas, “in recognition of high attainments of liberal scholarship,” 2007.
Guy O. and Rosa Lee Mabry Best Research Paper Award, School of Business, University of Kansas, 2007.
Mentor Award, Association of Business Doctoral Students, School of Business, University of Kansas, “for his distinguished service as a mentor for all doctoral students,” 2007.
Guy O. and Rosa Lee Mabry Best Research Paper Award, School of Business, University of Kansas, 2005.
Outstanding Mentor Award, Graduate & Professional Association, University of Kansas, 2003
Guy O. and Rosa Lee Mabry Research Fellow Award, School of Business, University of Kansas, 2001.
Excellence in Teaching, KU Center for Teaching Excellence, 1998.
Outstanding Mentor Award, Association of Business Doctoral Students, University of Kansas, 1995.
Guy O. and Rosa Lee Mabry Research Fellow Award, School of Business, University of Kansas, 1998.
Mentor Award, Association of Business Doctoral Students, University of Kansas, 1994
Guy O. and Rosa Lee Mabry Research Fellow Award, School of Business, University of Kansas, Spring 1994.
Executive Education Research Fellow Award, School of Business, University of Kansas, 1993–94
Mentor Award, Association of Business Doctoral Students, University of Kansas, 1991
Joyce C. Hall Faculty Scholar, School of Business, University of Kansas, 1983–1985
Graduate School Fellowship, Cornell University, 1976–1977
Teaching Assistantship, School of Operations Research and Industrial Engineering, Cornell University, 1973–1976

Areas of Research Interest

Uncertainty in Artificial Intelligence
Knowledge-based Systems
Decision Analysis
Game Theory

Funded Research Grants

- KU Hospital*, "A Refresh of the Model for Estimating Supplemental Security Income Fraction for 340B Drug Pricing Program Qualification," \$49,000, October–November 2018.
- Lockheed Martin Space Systems Company*, "Belief Function Models for Space Situational Awareness," \$19,920, January–December 2018.
- Lockheed Martin Space Systems Company*, "Belief Function Models for Space Situational Awareness," \$18,398, June–December 2017.
- Honeywell Federal Manufacturing & Technologies*, "Reducing Error in Purchase Order Forecasting Using Individualized Vendor Performance Models," \$119,993.00, June–December 2017
- Lockheed Martin Space Systems Company*, "Measuring Information Quality in Multi-Sensor Data Fusion Applications," \$24,675, June–September 2015.
- American International Group, Inc.*, "Predicting Probabilities of Dismissal of 10b-5 Securities Class Action Cases," \$125,000, April–September 2015, with Steve Hillmer as co-PI.
- KU Hospital*, "A Model for Estimating Supplemental Security Income Fraction for 340B Drug Pricing Program Qualification," \$50,000, June–September 2014.
- Lockheed Martin Space Systems Company*, "A Principled Approach to Fusion and Inference Using the Valuation-based Systems Framework," \$63,181, November 2013–August 2014.
- Raytheon Missile Systems*, "Information Fusion," \$50,027, August–December 2007.
- Raytheon Missile Systems*, "Belief Function Machine," \$45,053, January–June 2003.
- Raytheon Missile Systems*, "The Belief Machine: A MatLab Environment for Belief Function Reasoning," \$80,447, January–December 2002.
- HRL Laboratories*, "Decision Networks," \$20,000, 1999.
- Hughes Research Laboratories*, "Multi-Sensor Fusion," \$35,000, 1996.
- Hughes Research Laboratories*, "Multi-Sensor Fusion," \$20,000, 1995.
- University of Kansas General Research Fund*, "A Decision Calculus for Spohn's Theory of Epistemic Beliefs," \$4,500, 1994–95.
- National Science Foundation*, Decision, Risk and Management Science program, # SES-9213558, "Valuation-Based Systems for Decision Analysis," \$50,000, 1992–93.
- University of Kansas General Research Fund and School of Business Research Fund*, "A Qualitative Uncertainty Calculus," \$10,762, 1992–93.
- National Science Foundation*, Research Experiences for Undergraduates program, "Belief Functions in Artificial Intelligence," \$4,000, 1990–91.
- Apple Computer, Inc.*, Higher Education Academic Development Donations program, #Q290-039, "MacEvidence: A Visual Evidential Language for Building Expert Systems," \$12,437, 1990.
- National Science Foundation*, Database and Expert Systems program, # IRI-8902444, "Belief Functions in Artificial Intelligence," \$181,715, 1989–91, with G. Shafer.

- Peat Marwick Main Foundation*, Research Opportunities in Auditing program, #88-146, "Auditor's Assistant: A Graphical Language for Expert Systems for Auditing," \$39,980, 1989–90, with G. Shafer and R. Srivastava.
- Peat Marwick Main Foundation*, Research Opportunities in Auditing program, #87-135, "Auditor's Assistant: An Interactive System for Organizing and Evaluating Audit Judgments," \$39,499, 1988–89, with G. Shafer and R. Srivastava.
- National Science Foundation*, Database and Expert Systems program, #IRI-8610293, "Belief Functions in Artificial Intelligence," \$247,862, 1986–89, with G. Shafer.
- Peat Marwick Main Foundation*, Research Opportunities in Auditing program, #85-180, "An Interactive Tool for Managing Uncertainty in Expert Systems for Auditing," \$36,663, 1986–87, with G. Shafer and R. Srivastava.
- University of Kansas General Research Fund and School of Business Research Fund*, "A Competitive Economic Order Quantity Model," \$5,802, 1984–85.
- University of Kansas General Research Fund and School of Business Research Fund*, "On Rawlsian Economic Justice," \$4,623, 1981–82.
- University of Kansas General Research Fund and School of Business Research Fund*, "Measuring Power in Voting Systems," \$4,615, 1980–81.
- University of Kansas General Research Fund and School of Business Research Fund*, "Group Decision Making Schemes," \$3,031, 1979–80.

Papers in Refereed Journals and Edited Books

- Dencœux, T. and P. P. Shenoy, "An Interval-Valued Utility Theory for Decision Making with Dempster-Shafer Belief Functions," *International Journal of Approximate Reasoning*, Vol. 124, No. 9, 2020, pp. 194–216. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "On Properties of a New Decomposable Entropy of Dempster-Shafer Belief Functions," *International Journal of Approximate Reasoning*, Vol. 119, No. 4, 2020, pp. 260–279. [PDF](#) [DOI](#)
- Tan, Y. and P. P. Shenoy, "A Bias-Variance Based Heuristic for Constructing a Hybrid Logistic Regression-Naïve Bayes Model for Classification," *International Journal of Approximate Reasoning*, Vol. 117, No. 2, 2020, pp. 15–28. [PDF](#) [DOI](#)
- Shenoy, P. P., "An Expectation Operator for Belief Functions in the Dempster-Shafer Theory," *International Journal of General Systems*, Vol. 49, No. 1, 2020, pp. 112–141. [PDF](#) [DOI](#)
- Dencœux, T. and P. P. Shenoy, "An Axiomatic Utility Theory for Dempster-Shafer Belief Functions," in J. de Bock, C. P. de Campos, G. de Cooman, E. Quaeghebeur, and G. Wheeler (eds.), *Proceedings of the 2019 International Symposium on Imprecise Probabilities: Theory and Applications (ISIPTA-19), Proceedings of Machine Learning Research*, Vol. 103, 2019, 145–155. [PDF](#) [WWW](#)
- Jaunzemis, A. D., M. J. Holzinger, M. W. Chan, and P. P. Shenoy, "Evidence Gathering for Hypothesis Resolution Using Judicial Evidential Reasoning," *Information Fusion*, Vol. 49, No. 9, 2019, pp. 26–45. [PDF](#) [DOI](#)
- Singha, S. and P. P. Shenoy, "An Adaptive Heuristic for Feature Selection based on Complementarity," *Machine Learning*, Vol. 107, No. 12, 2018, pp. 2027–2071. [PDF](#) [DOI](#)

- Jiroušek, R. and P. P. Shenoy, "Combination and Composition in Probabilistic Models" in L. H. Ahn, L. S. Dong, V. Kreinovich, and N. N. Thach (eds.), *Econometrics for Financial Applications: ECONVN 2018 Conference Proceedings*, Studies in Computational Intelligence, Vol. 760, 2018, pp. 120–133, Springer, Cham. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "A Decomposable Entropy of Belief Functions in the Dempster-Shafer Theory," in S. Destercke, T. Denœux, F. Cuzzolin, and A. Martin (eds.), *Belief Functions: Theory and Applications*, Lecture Notes in Artificial Intelligence, Vol. 11069, 2018, pp. 146–154, Springer Nature, Switzerland. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "A New Definition of Entropy of Belief Functions in the Dempster-Shafer Theory," *International Journal of Approximate Reasoning*, Vol. 92, No. 1, 2018, pp. 49–65. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "Inference in Hybrid Bayesian Networks with Nonlinear Deterministic Conditionals," *International Journal of Intelligent Systems*, Vol. 32, No. 12, 2017, pp. 1217–1246. [PDF](#) [DOI](#)
- Singha, S., S. Hillmer, and P. P. Shenoy, "On Computing Probabilities of Dismissal of 10b-5 Securities Class-Action Cases," *Decision Support Systems*, Vol. 94, No. 2, 2017, pp. 29–41. [PDF](#) [DOI](#)
- Cinicioglu, E. N. and P. P. Shenoy, "A New Heuristic for Learning Bayesian Networks from Limited Datasets: A Real-Time Recommendation System Application with RFID System in Grocery Stores," *Annals of Operations Research*, Vol. 244, No. 2, 2016, pp. 385–405. [PDF](#) [DOI](#)
- Tan, Y., P. P. Shenoy, M. W. Chan, and P. M. Romberg, "On Construction of Hybrid Logistic Regression-Naïve Bayes Model for Classification," in A. Antonucci, G. Corani, and C. P. de Campos (eds.), *Proceedings of Machine Learning Research*, Vol. 52: Conference on Probabilistic Graphical Models, 6–9 September 2016, Lugano, Switzerland, pp. 523–534. [PDF](#) [WWW](#)
- Jiroušek, R. and P. P. Shenoy, "Entropy of Belief Functions in the Dempster-Shafer Theory: A New Perspective," in J. Vejnarová and V. Kratochvíl (eds.), *Belief Functions: Theory and Applications*, Lecture Notes in Artificial Intelligence, Vol. 9861, 2016, pp. 1–11, Springer International Publishing, Switzerland. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "Causal Compositional Models in Valuation-based Systems with Examples in Specific Theories," *International Journal of Approximate Reasoning*, Vol. 72, No. 1, 2016, pp. 95–112. [PDF](#) [DOI](#)
- Shenoy, P. P., R. Rumí and A. Salmerón "Practical Aspects of Solving Hybrid Bayesian Networks Containing Deterministic Conditionals," *International Journal of Intelligent Systems*, Vol. 30, No. 3, 2015, pp. 265–291. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "Causal Compositional Models in Valuation-Based Systems," in F. Cuzzolin (ed.), *Belief Functions: Theory and Applications*, Lecture Notes in Artificial Intelligence, Vol. 8764, 2014, pp. 256–264, Springer, Switzerland. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "Compositional Models in Valuation-Based Systems," *International Journal of Approximate Reasoning*, Vol. 55, No. 1, 2014, pp. 277–293. [PDF](#) [DOI](#)
- Jiroušek, R. and P. P. Shenoy, "Conditioning in Decomposable Compositional Models in Valuation-Based Systems," in S. Greco, B. Bouchon-Meunier, G. Coletti, M. Fedrizzi, B. Matarazzo, and R. Yager (eds.), *Advances in Computational Intelligence*, Lecture Notes in Computer Science 300, Part IV, 2012, pp. 676–685, Springer-Verlag, Berlin. [PDF](#) [DOI](#)

- Jiroušek, R. and P. P. Shenoy, "Compositional Models in Valuation-Based Systems," in T. Denoeux and M.-H. Masson (eds.), *Belief Functions: Theory and Applications*, Advances in Intelligent and Soft Computing, Vol. 164, 2012, 221–228, Springer, Heidelberg. [PDF](#) [DOI](#)
- Shenoy, P. P. "Two Issues in Using Mixtures of Polynomials for Inference in Hybrid Bayesian Networks," *International Journal of Approximate Reasoning*, Vol. 53, No. 5, 2012, pp. 847–866. [PDF](#) [DOI](#)
- Li, Yi and P. P. Shenoy, "A Framework for Solving Hybrid Influence Diagrams Containing Deterministic Conditional Distributions," *Decision Analysis*, Vol. 9, No. 1, 2012, pp. 55–75. [PDF](#) [DOI](#)
- Shenoy, P. P. "A Re-Definition of Mixtures of Polynomials for Inference in Hybrid Bayesian Networks," in W. Liu (ed.), *Symbolic and Quantitative Approaches to Reasoning with Uncertainty—ECSQARU 2011*, Lecture Notes in Artificial Intelligence, Vol. 6717, 2011, pp. 98–109, Springer, Heidelberg. [PDF](#) [DOI](#)
- Shenoy, P. P. and J. C. West, "Extended Shenoy-Shafer Architecture for Inference in Hybrid Bayesian Networks with Deterministic Conditionals," *International Journal of Approximate Reasoning*, Vol. 52, No. 6, 2011, pp. 805–818. [PDF](#) [DOI](#)
- Shenoy, P. P. and J. C. West, "Inference in Hybrid Bayesian Networks Using Mixtures of Polynomials," *International Journal of Approximate Reasoning*, Vol. 52, No. 5, 2011, pp. 641–657. [PDF](#) [DOI](#)
- Giang, P. H. and P. P. Shenoy, "A Decision Theory for Partially Consonant Belief Functions," *International Journal of Approximate Reasoning*, Vol. 52, No. 3, 2011, pp. 375–394. [PDF](#) [DOI](#)
- Bielza, C., M. Gomez, and P. P. Shenoy, "A Review of Representation Issues and Modeling Challenges with Influence Diagrams," *Omega: International Journal of Management Science*, Vol. 39, No. 3, 2011, pp. 227–241. [PDF](#) [DOI](#)
- Bielza, C., M. Gomez, and P. P. Shenoy, "Modeling Challenges with Influence Diagrams: Constructing Probability and Utility Models," *Decision Support Systems*, Vol. 49, No. 4, 2010, 354–364. [PDF](#) [DOI](#)
- Li, Y. and P. P. Shenoy, "Solving Hybrid Influence Diagrams with Deterministic Variables," in P. Grünwald and P. Spirtes (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 26th Conference*, 2010, pp. 322–331, AUA Press, Corvallis, OR. [PDF](#)
- Shenoy, P. P. and J. C. West, "Inference in Hybrid Bayesian Networks with Deterministic Variables," in C. Sossai and G. Chemello (eds.), *Symbolic and Quantitative Approaches to Reasoning with Uncertainty – 10th ECSQARU*, Lecture Notes in Artificial Intelligence, Vol. 5590, 2009, pp. 46–58, Springer-Verlag, Berlin. [PDF](#) [DOI](#)
- Cinicioglu, E. N. and P. P. Shenoy, "Arc Reversals in Hybrid Bayesian Networks with Deterministic Variables," *International Journal of Approximate Reasoning*, Vol. 50, No. 5, 2009, pp. 763–777. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "Decision Making with Hybrid Influence Diagrams Using Mixtures of Truncated Exponentials," *European Journal of Operational Research*, Vol. 186, No. 1, 2008, pp. 261–275. [PDF](#) [DOI](#)
- Cinicioglu, E. N., P. P. Shenoy, and C. Kocabasoglu "Use of Radio Frequency Identification for Targeted Advertising: A Collaborative Filtering Approach Using Bayesian Networks," in K. Mellouli (ed.), *Symbolic and Quantitative Approaches to Reasoning with Uncertainty*, Lecture Notes in Artificial Intelligence, Vol. 4724, 2007, pp. 889–900, Springer-Verlag, Berlin. [PDF](#) [DOI](#)

- Sun, L. and P. P. Shenoy, "Using Bayesian Networks for Bankruptcy Prediction in Stressed Firms: Some Methodological Issues," *European Journal of Operational Research*, Vol. 180, No. 2, 2007, pp. 738–753. [PDF](#) [DOI](#)
- Liu, L., C. Shenoy, and P. P. Shenoy, "Knowledge Representation and Integration for Portfolio Evaluation Using Linear Belief Functions," *IEEE Transactions on Systems, Man, and Cybernetics*, Part A: Systems and Humans, Vol. 36, No. 4, 2006, pp. 774–785. [PDF](#) [DOI](#)
- Shenoy, P. P., "Inference in Hybrid Bayesian Networks Using Mixtures of Gaussians," in R. Dechter and T. Richardson (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 22nd Conference*, 2006, pp. 428–436, AUAI Press, Corvallis, OR. [PDF](#)
- Cobb, B. R., P. P. Shenoy, and R. Rumi, "Approximating Probability Density Functions with Mixtures of Truncated Exponentials," *Statistics and Computing*, Vol. 16, No. 3, 2006, pp. 293–308. [PDF](#) [DOI](#)
- Jensen, F. V., T. D. Nielsen, and P. P. Shenoy, "Sequential Influence Diagrams: A Unified Asymmetry Framework," *International Journal of Approximate Reasoning*, Vol. 42, Nos. 1–2, 2006, pp. 101–118. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "Operations for Inference in Continuous Bayesian Networks with Linear Deterministic Variables," *International Journal of Approximate Reasoning*, Vol. 42, Nos. 1–2, 2006, pp. 21–36. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "On the Plausibility Transformation Method for Translating Belief Function Models to Probability Models," *International Journal of Approximate Reasoning*, Vol. 41, No. 3, 2006, pp. 314–340. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "Inference in Hybrid Bayesian Networks with Mixtures of Truncated Exponentials," *International Journal of Approximate Reasoning*, Vol. 41, No. 3, 2006, pp. 257–286. [PDF](#) [DOI](#)
- Demirer, R. and P. P. Shenoy, "Sequential Valuation Networks and Asymmetric Decision Problems," *European Journal of Operational Research*, Vol. 169, No. 1, 2006, pp. 286–309. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "Hybrid Bayesian Networks with Linear Deterministic Variables" in F. Bacchus and T. Jaakkola (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 21st Conference*, 2005, pp. 136–144, AUAI Press, Corvallis, OR. [PDF](#)
- Cobb, B. R. and P. P. Shenoy, "Nonlinear Deterministic Relationships in Bayesian Networks," in L. Godo (ed.), *Symbolic and Quantitative Approaches to Reasoning with Uncertainty*, Lecture Notes in Artificial Intelligence, Vol. 3571, 2005, pp. 27–38, Springer-Verlag, Berlin. [PDF](#) [DOI](#)
- Giang, P. H., and P. P. Shenoy, "Decision Making on the Sole Basis of Likelihood," *Artificial Intelligence*, Vol. 165, No. 2, 2005, pp. 137–163. [PDF](#) [DOI](#)
- Giang, P. H., and P. P. Shenoy, "Two Axiomatic Approaches to Decision Making Using Possibility Theory," *European Journal of Operational Research*, Vol. 162, No. 2, 2005, pp. 450–467. [PDF](#) [DOI](#)
- Nadkarni, S. and P. P. Shenoy, "A Causal Mapping Approach to Constructing Bayesian Networks," *Decision Support Systems*, Vol. 38, No. 2, 2004, pp. 259–281. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "Hybrid Influence Diagrams Using Mixtures of Truncated Exponentials," in M. Chickering and J. Halpern (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 20th Conference*, 2004, pp. 85–93, AUAI Press, Arlington, VA. [PDF](#)

- Liu, L., and P. P. Shenoy, "Representing Asymmetric Decision Problems Using Coarse Valuations," *Decision Support Systems*, Vol. 37, No. 1, 2004, pp. 119–135. [PDF](#) [DOI](#)
- Charnes, J. M. and P. P. Shenoy, "Multistage Monte Carlo Method for Solving Influence Diagrams Using Local Computation," *Management Science*, Vol. 50, No. 3, 2004, pp. 405–418. [PDF](#) [DOI](#)
- Cobb, B. R. and P. P. Shenoy, "A Comparison of Bayesian and Belief Function Reasoning," *Information Systems Frontiers*, Vol. 5, No. 4, 2003, pp. 345–358. [PDF](#) [DOI](#)
- Giang, P. H. and P. P. Shenoy, "Decision Making with Partially Consonant Belief Functions" in C. Meek and U. Kjærulff (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 19th Conference*, 2003, pp. 272–280, Morgan Kaufmann, San Francisco, CA. [PDF](#)
- Liu, L., C. Shenoy, and P. P. Shenoy, "A Linear Belief Function Approach to Portfolio Evaluation" in C. Meek and U. Kjærulff (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 19th Conference*, 2003, pp. 370–377, Morgan Kaufmann, San Francisco, CA. [PDF](#)
- Cobb, B. R. and P. P. Shenoy, "A Comparison of Methods for Transforming Belief Function Models to Probability Models," in T. D. Nielsen and N. L. Zhang (eds.), *Symbolic and Quantitative Approaches to Reasoning with Uncertainty*, Lecture Notes in Artificial Intelligence, Vol. 2711, 2003, pp. 255–266, Springer-Verlag, Berlin. [PDF](#) [DOI](#)
- Giang, P. H. and P. P. Shenoy, "Statistical Decisions Using Likelihood Information Without Prior Probabilities" in A. Darwiche and N. Friedman (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 18th Conference*, 2002, pp. 170–178, Morgan Kaufmann, San Francisco, CA. [PDF](#)
- Shenoy, C. and P. P. Shenoy, "Modeling Financial Portfolios Using Belief Functions," in R. P. Srivastava and T. J. Mock (eds.), *Belief Functions in Business Decisions*, Studies in Fuzziness and Soft Computing, Vol. 88, 2002, pp. 316–332, Physica-Verlag, Heidelberg. [PDF](#) [DOI](#)
- Demirer, R. and P. P. Shenoy, "Sequential Valuation Networks: A New Graphical Technique for Asymmetric Decision Problems," in S. Benferhat and P. Besnard (eds.), *Symbolic and Quantitative Approaches to Reasoning with Uncertainty*, Lecture Notes in Artificial Intelligence, Vol. 2143, 2001, pp. 252–265, Springer-Verlag, Heidelberg. [PDF](#) [DOI](#)
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- Giang, P. H. and P. P. Shenoy, "A Comparison of Axiomatic Approaches to Qualitative Decision Making Using Possibility Theory" in J. Breese and D. Koller (eds.), *Uncertainty in Artificial Intelligence: Proceedings of the 17th Conference*, 2001, pp. 162–170, Morgan Kaufmann, San Francisco, CA. [PDF](#)
- Kohlas, J. and P. P. Shenoy, "Computation in Valuation Algebras," in D. Gabbay and P. Smets (eds.), *Handbook of Defeasible Reasoning and Uncertainty Management Systems, Volume 5: Algorithms for Uncertainty and Defeasible Reasoning*, 2000, pp. 5–39, Kluwer Academic Publishers, Dordrecht. [PDF](#) [DOI](#)
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- Shenoy, C. and P. P. Shenoy, "Bayesian Network Models of Portfolio Risk and Returns," in Y. S. Abu-Mostafa, B. LeBaron, A. W. Lo, and A. S. Weigend (eds.), *Computational Finance 1999*, 2000, pp. 87–106, MIT Press, Cambridge, MA. [PDF](#) [WWW](#)
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- Uncertainty in Artificial Intelligence
- Decision Analysis and Game Theory
- Probability and Statistics

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- Ph.D., Yijing Li, in progress, "Some Issues in Solving Hybrid Decision Problems"
- Ph.D., Yi Tan, 2020, "New Probabilistic Techniques for Classification Problems and an Application"
- Ph.D., Sumanta Singha, 2018, "Three Essays on Feature and Model Selection for Classification and Regression Problems"
- Ph.D., Esmá Nur Cinicioglu, 2008, "On Solving Stochastic PERT Networks and Using RFIDs for Operations Management"
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- Ph.D., Barry R. Cobb, 2005, "Inference and Decision Making in Hybrid Bayesian Networks"
- Ph.D., Saverio Manago, 2005, "Knowledge-Based Bayesian Networks for Discriminant Analysis"
- Ph.D., Phan Hong Giang, 2003, "A Decision Theory for Non-Probabilistic Uncertainty and Its Applications"
- Ph.D., Sucheta Nadkarni, 2000, "Industry Clock speed and Evolution of Cognitive Maps"
- Ph.D., Diane Lander, 1997, "Real Option Valuation: An Uncertain Reasoning Approach"
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- Ph.D., Ali Jenzarli, 1995, "Modeling Dependence in Project Management"
- Ph.D., Khaled Mellouli, 1987, "On the Propagation of Beliefs in Networks using the Dempster-Shafer Theory of Evidence"
- M.S., John G. McManus, 1986, "A Line Search Method and Other Modifications for Improving the Efficiency of the Nonlinear Simplex Method"

Papers Delivered at Professional Meetings (January 2008 onwards)

- Fifth School on Belief Functions and their Applications, Siena, Italy, October 2019.
- Eleventh International Symposium on Imprecise Probabilities: Theory and Applications (ISIPTA-2019), Ghent, Belgium, July 2019.
- Fifth International Conference on Belief Functions (Belief-2018), Compiègne, France, September 2018.
- Twenty-First International Conference on Information Fusion (FUSION-2018), Cambridge, UK, July 2018.
- Eleventh Workshop on Uncertainty Processing (WUPES-2018), Třeboň, Czech Republic, June 2018.
- Fourth International Conference on Belief Functions (Belief-2016), Prague, Czech Republic, September 2016.
- INFORMS National Meeting, San Francisco, CA, November 2014.
- Third International Conference on Belief Functions (Belief-2014), Oxford, UK, September 2014.
- Sixth European Workshop on Probabilistic Graphical Models (PGM-2012), Granada, Spain, September 2012.
- Ninth Workshop on Uncertainty Processing (WUPES-2012), Mariánské Lázně, Czech Republic, September 2012.
- Second International Conference on Belief Functions (Belief-2012), Compiègne, France, May 2012, invited presentation.
- Eleventh European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-2011), Belfast, Northern Ireland, UK, June 2011.
- First Spring School on Belief Functions and Their Applications, Autrans, France, April 2011.
- INFORMS National Meeting, Austin, TX, November 2010.
- Twenty-Sixth Conference on Uncertainty in Artificial Intelligence, Avalon, CA, July 2010.

Eighth Workshop on Uncertainty Processing (WUPES-2009), Liblice, Czech Republic, September 2009.

Tenth European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-2009), Verona, Italy, July 2009.

INFORMS National Meeting, Washington DC, October 2008.

Administrative Service, 2008–onwards

- Search Committee for two faculty positions in Business Analytics, 2019–20.
- Search Committee for faculty position in Business Analytics, 2018–19.
- Search Committee for faculty position in Business Analytics, 2017–18.
- Strategic Planning Coordination Committee, 2017–18.
- Director, Center for Business Analytics Research, June 2012 onwards
- School of Business PhD Team, Fall 2011 onwards.
- School of Business Research Evaluation and Development Team, elected, 2012–14, 2015–18.
- Member of Strategic Initiative Theme 4: Harnessing Information, Multiplying Knowledge
- Search Committee for Asst. Prof. position in Supply Chain Management, 2010–11.
- Search Committee for Asst. Prof. position in Supply Chain Management, 2008–09.
- School of Business Research Evaluation and Development Team, elected, 2007–08, 2008–09.
- University of Kansas Faculty Senate Executive Committee (FacEx), elected, 2007–08
- University of Kansas Faculty Senate, elected, 2005–06, 2006–07, 2007–08

Editorial Service (2008 onwards)

Chair of Board for

- Association for Uncertainty in Artificial Intelligence, August 2012—July 2014.

Treasurer for:

- Association for Uncertainty in Artificial Intelligence, August 2010—2012.

Associate Editor for:

- International Journal of Approximate Reasoning, North-Holland, Amsterdam, 1990–present.

Editorial Board Member of

- International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, 2005–present.
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Program Committees Member of:

- 6th International Conference on Belief Functions (BELIEF-2021), Shanghai, China, October 2021.
- 12th International Symposium on Imprecise Probability: Theories and Applications (ISIPTA-2021), Granada, Spain, July 2021.
- 12th Workshop on Uncertainty Processing (WUPES-2021), Kutna Hora, Czech Republic, June 2021.
- 10th International Conference on Probabilistic Graphical Models (PGM-2020), Aalborg, Denmark, September 2020.
- 11th International Symposium on Imprecise Probabilities: Theory and Applications (ISIPTA-2019), Ghent, Belgium, July 2019.
- 11th Workshop on Uncertainty Processing (WUPES-2018), Třeboň, Czech Republic, June 2018.
- 9th International Conference on Probabilistic Graphical Models (PGM-18), Prague, Czech Republic, September 2018.
- 5th International Conference on Belief Functions (Belief-2018), Compiègne, France, September 2018.
- 4th International Conference on Belief Functions (Belief-2016), Prague, Czech Republic, September 2016.
- 8th International Conference on Probabilistic Graphical Models (PGM-16), Lugano, Switzerland, September 2016.
- 32nd Conference on Uncertainty in Artificial Intelligence (UAI-16), New York City, NY, June 2016 (Senior Program Committee).
- 31st Conference on Uncertainty in Artificial Intelligence (UAI-15), Amsterdam, Netherlands, July 2015 (Senior Program Committee).
- 3rd International Conference on Belief Functions (Belief-2014), Oxford, UK, September 2014.
- 30th Conference on Uncertainty in Artificial Intelligence (UAI-14), Quebec City, Quebec, CA, July 2014 (Senior Program Committee).
- 29th Conference on Uncertainty in Artificial Intelligence (UAI-13), Bellevue, WA, August 2013 (Senior Program Committee).
- 8th International Symposium on Imprecise Probabilities (ISIPTA-13), Compiègne, France, July 2013.
- 7th International Conference on Scalable Uncertainty Management (SUM-13), Washington, DC, April 2013.
- 6th European Workshop on Probabilistic Graphical Models (PGM-12), Granada, Spain, September 2012.
- 6th International Conference on Scalable Uncertainty Management (SUM-12), Marburg, Germany, September 2012.
- 28th Conference on Uncertainty in Artificial Intelligence (UAI-12), Avalon, CA, August 2012 (Senior Program Committee).
- 13th International Conference on Principles of Knowledge Representation and Reasoning (KR-12), Rome, Italy, June 2012.

- 2nd International Conference on Belief Functions (BELIEF-12), Compiègne, France, May 2012.
- 5th International Conference on Scalable Uncertainty Management (SUM-11), Dayton, OH, October 2011.
- 27th Conference on Uncertainty in Artificial Intelligence (UAI-11), Barcelona, Spain, July 2011 (Senior Program Committee).
- 11th European Conference of Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-11), Belfast, UK, June 2011.
- 4th International Conference on Scalable Uncertainty Management (SUM-10), Toulouse, France, September 2010.
- 5th European Workshop on Probabilistic Graphical Models (PGM-10), Helsinki, Finland, September 2010.
- 19th European Conference on Artificial Intelligence (ECAI-10), Lisbon, Portugal, August 2010.
- 26th Conference on Uncertainty in Artificial Intelligence (UAI-10), Catalina Island, CA, July 2010 (Senior Program Committee).
- 13th International Conference on Information Processing and Management of Uncertainty in Knowledge-based Systems (IPMU-2010), Dortmund, Germany, June-July 2010.
- 1st Workshop on the Theory of Belief Functions, Brest, France, April 2010.
- 3rd International Conference on Scalable Uncertainty Management (SUM-09), Washington DC, September 2009.
- 25th Conference on Uncertainty in Artificial Intelligence (UAI-09), Montreal, Canada, June 2009 (Senior Program Committee).
- 10th European Conference of Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-09), Verona, Italy, July 2009.
- 24th Conference on Uncertainty in Artificial Intelligence (UAI-08), Helsinki, Finland, July 2008 (Senior Program Committee).
- 12th International Conference on Information Processing and Management of Uncertainty in Knowledge-based Systems (IPMU-08), Malaga, Spain, July 2008.

Ad-Hoc Referee for:

National Science Foundation (Economics; Decision, Risk and Management Science; Database and Expert Systems; Knowledge Models and Cognitive Systems, Robust Intelligence)

National Academy of Sciences/National Research Council
 European Science Foundation College of Expert Reviewers
 Natural Sciences and Engineering Research Council of Canada
 Czech Republic Academy of Sciences
 Decision Support Systems
 European Journal of Operational Research
 Statistical Science

Membership in Professional Societies

Institute of Operations Research and Management Sciences (INFORMS)
 Decision Analysis Society (DAS)

Web Links

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- Publons: <<https://publons.com/researcher/697854/prakash-p-shenoy/>>
- Researchgate: <https://www.researchgate.net/profile/Prakash_Shenoy>
- arXiv: <http://arxiv.org/a/shenoy_p_2>