Curriculum Vitae for Phan H. Giang

Address

4400 University Dr - MS 1J3
North East Module I - 127 Fairfax
VA 22030
Ph: 703-853-9398
pgiang@gmu.edu
http://www.mli.gmu.edu/pgiang

Education

Ph.D. (2003)	Decision Science (with minor in Finance), University of Kansas
M.Sc. (1998)	Computer Science, Australian National University, Australia
B.Sc. (1985)	Information Science, Moscow State University of Economics, Statistics and Informatics (MESI), Moscow, Russia

Professional Experience

09/2009 - now — Associate Professor, Department of Health Administration & Policy, College of Health and Human Services, George Mason University

- In collaboration with colleagues in the department, he designed the curriculum for the Master Program in Health Informatics
- Teaching Health Informatics courses for graduate students
- Conducting research in decision making with applications for healthcare.
- Conducting research in text mining using patient data. Collaborating with collegues from Veteran Affairs creating softwares to extract Barthel Index of Activities of Daily Living from clinical notes, forecast functional status and mortality risk.

2003-2009 — Siemens Medical Solutions, Malvern, PA. As a staff scientist, his duties included research and development of advanced methods and implementation of algorithms in the areas of probabilistic inference and learning from medical patient data.

2000-2001 — Teaching Assistant (TA) School of Business, the University of Kansas.

1998-1999, 2001-2003 Research Assistant (RA) to Prof. Prakash Shenoy, School of Business, the University of Kansas. The duty included: research on uncertain reasoning, implementation of algorithms. He implemented Shenoy's fusion algorithm for reasoning with Dempster-Shafer belief functions in the "Belief Machine" project sponsored by the Raytheon Company which used the software for discrimination analysis.

1986-95 The Institute for Information Technology, Hanoi, Vietnam. worked a software engineer.

Teaching

Areas of interest Health Informatics, Decision Analysis, Operations Research

Curriculum design Master of Science Program in Health Informatics at George Mason University

Courses taught at Department of Health Administration and Policy, George Mason University 2010-2015

- HAP701 Health Data: Vocabulary and Standards
- HAP709 Healthcare Databases
- HAP720 Health Data Integration
- HAP601 E-commerce and Topics in EHR

at University of Kansas, School of Business for undergraduates 2000-2001

- BUS475 Management Sciences and Operation Research

Research

Areas of interest Health Informatics, Decision Theory, Decision making under Uncertainty, Bayesian Statistics, Machine Learning and Artificial Intelligence

Review Services

Journals and conferences Information Sciences Journal, Artificial Intelligence Journal, International Journal of Approximate Reasoning. Annual Meeting of the Society for Medical Decision Making (SMDM). International Join Conference on Artificial Intelligence (IJCAI 2005). Knowledge Discovery and Data Mining Conference (KDD 2004). International Conferences on Uncertainty in Artificial Intelligence (UAI 2002–2015). European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU 2001, 2002). Society for

Medical Decision Making (SMDM). American Medical Informatics Association (AMIA 2013-2015).

Ph.D. Dissertation

Title	A Decision Theory for Non-probabilistic Uncertainty and Its Applications
Committee	Prakash Shenoy (chair), John Charnes, Steve Hillmer (all from University of Kansas, School of Business), Tyrone Duncan (University of Kansas, Math Department) and Arthur Dempster (Harvard University, Statistics Department)

Publications

[1] Phan H. Giang. Decision making under uncertainty comprising complete ignorance and probability. *International Journal of Approximate Reasoning*, 2015. http://dx.doi.org/10.1016/j.ijar.2015.05.001.

[2] P. H. Giang. Decision making under ignorance. In G. Rogova and P. Scott, editors, *Information Fusion In Crisis Management*. Springer, 2015.

[3] Phan H. Giang. A machine learning approach to create blocking criteria for record linkage. *Health Care Management Science*, 18(1):93–105, 2015.

[4] P. H. Giang, A. Williams, and L. Argyros. Automated extraction of the Barthel index from clinical texts. In *Procs of Annual Symposium of the American Medical Informatics Association (AMIA-2013)*. AMIA, 2013.

[5] P. H. Giang. Decision making in the environment of heterogeneous uncertainty. In Peijun Guo and Witold Pedrycs, editors, *Human-Centric Decision Making Models for Social Sciences*. Springer, 2013.

[6] P. H. Giang. Non-parametric synthesis of private probabilistic predictions. In A. Brodsky and K. B. Laskey, editors, *28th IEEE International Conference on Data Engineering (ICDE 2012) Workshop on Data-Driven Decision Support and Guidance Systems*, Washinton DC, 4 2012.

[7] P. H. Giang. Decision with Dempster-Shafer belief functions: Decision under ignorance and sequential consistency. *International Journal of Approximate Reasoning*, 53(1):38–53, 2012.

[8] P. H. Giang. Dynamic consistency and decision making under vacuous belief. In Fabio G. Cozman and Avi Pfeffer, editors, *Uncertainty in Artificial Intelligence: Proceedings of the 27nd Conference (UAI–2011)*, pages 230–237. AUAI Press, 2011.

[9] P. H. Giang and P. P. Shenoy. A decision theory for partially consonant belief functions. *International Journal of Approximate Reasoning*, 52:375–394, 2011.

[10] P. H. Giang. On Jaffray's decision model for belief functions. In *Proc. of 5th International Conference on Soft Methods in Probability and Statistics*, pages 313–320, Spain, 10 2010. Springer-Verlag. Advances in Intelligent and Soft Computing Series.

[11] G. Fung, H. Steck, S. Yu, and P. H. Giang. Improving medical predictive models via likelihood gamble pricing. In *ICML/UAI/COLT 2008 Workshop on Machine Learning for Health-Care Applications*, 2008.

[12] P. H. Giang. A new axiomatization for likelihood gambles. In Rina Dechter and Thomas S. Richardson, editors, *Uncertainty in Artificial Intelligence: Proceedings of the 22nd Conference (UAI–2006)*, pages 192–199. AUAI Press, 2006.

[13] P. H. Giang and P. P. Shenoy. Decision making on the sole basis of statistical likelihood. *Artificial Intelligence*, 165:137–163, 2005.

[14] P. H. Giang and P. P. Shenoy. Two axiomatic approaches to decision making using possibility theory. *European Journal of Operational Research*, 162(2):450–467, 2005.

[15] P. H. Giang and S. Sandilya. Decision making with symbolic probability. In Chris Meek and Joseph Halpern, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Twentieth Conference (UAI–2004)*, San Francisco, CA, 2004. Morgan Kaufmann.

[16] P. H. Giang and P. P. Shenoy. Decision making with partially consonant belief functions. In Chris Meek and Uffe Kjaerulff, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Nineteenth Conference (UAI–2003)*, San Francisco, CA, 2003. Morgan Kaufmann.

[17] P. H. Giang and P. P. Shenoy. Statistical decisions using likelihood information without prior probabilities. In Adnan Darwiche and Nir Friedman, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Eightteenth Conference (UAI–2002)*, pages 170–178, San Francisco, CA, 2002. Morgan Kaufmann Publishers.

[18] P. H. Giang and P. P. Shenoy. A comparison of axiomatic approaches to qualitative decision making using possibility theory. In Jack Breese and Daphne Koller, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Seventeenth Conference (UAI-2001)*, pages 162–170, San Francisco, CA, 2001. Morgan Kaufmann Publishers.

[19] P. H. Giang and P. P. Shenoy. A qualitative linear utility theory for Spohn's theory of epistemic beliefs. In C. Boutilier and M. Goldszmidt, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Sixteenth Conference (UAI–2000)*, pages 220–229, San Francisco, CA, 2000. Morgan Kaufmann Publishers.

[20] P. H. Giang and P. P. Shenoy. On transformations between probability and Spohnian disbelief functions. In K. B. Laskey and H. Prade, editors, *Uncertainty in Artificial Intelligence: Proceedings of the Fifteenth Conference (UAI–99)*, pages 236–244, San Francisco, CA, 1999. Morgan Kaufmann Publishers.

[21] P. H. Giang, D. Dubois, and H. Prade. A probabilistic approach to ordering formulas in a possibilistic knowledge base. *International Journal of Uncertainty, Fuzziness and Knowledge-based Systems*, 6(3):241–256, 1998.

[22] P. H. Giang. Representation of uncertain belief using interval probability. In Rolf Drechsler, Okihiko Ishizuka, and Miller D. Michael, editors, *Proceedings of 27th International Symposium on Multiple-valued Logic*, pages 111–116. IEEE Computer Society Press, 1997.

[23] D. V. Hung and P. H. Giang. Sampling semantics of duration calculus. In B. Jonsson and J. Parrow, editors, *LECTURE NOTES IN COMPUTER SCIENCE*, volume 1135, pages 188–207. Springer, 1996.

[24] P. H. Giang. Detection of infiniteness in Prolog programs. In Setsuo Ohsuga, editor, *Proceedings of Pacific Rim International Conference on Artificial Intelligence*, Nagoya, Japan, 11 1990.

[25] D. D. Phan and P. H. Giang. Interval valued probabilistic logic for logic programs. *Journal of Informatics and Cybernetics*, 9(1), 1995. (in Vietnamese).

Patents

1. System and Method for Medical Predictive Models Using Likelihood Gamble Pricing with Glenn Fung, Harald Steck and Bharat Rao (Patent number: `8010476` issued on Aug 30, 2011)

2. Optimizing Database Access for Record Linkage by Tiling the Space of Record Pairs with William Landi, Bharat Rao and Sathyakama Sandilya (Patent number: `7403936` issued on Jul 22, 2008)

3. Machine Aided Translation of narrative clinical statements to HL7 Clinical Document Architecture (USPTO Pub. No. `61/579,187` filed with USPTO on 12/22/2011)

4. System and Method for Generating Automatic Blocking Filters for Record Linkage (USPTO Pub. No. `2007-0174277`) with Bill Landi and Bharat Rao

5. System and Method for Data Sensitive Filtering of Patient Demographic Record Queries (USPTO Pub. No. `2006-0294092`) with William Landi and Sathyakama Sandilya

6. Probabilistic Model for Record Linkage (USPTO Pub. No. `2006-0179050`) with William Landi, Bharat Rao and Sathyakama Sandilya

7. System and Method for Blocking Key Selection (USPTO Pub. No. 2005-0246330) with William Landi, Bharat Rao and Sathyakama Sandilya

Presentations

Conferences and Workshops International Conference on Soft Methods in Probability and Statistics (2010), International Conferences on Uncertainty in Artificial Intelligence (UAI 2011), International Conference on Data Engineering (ICDE 2012), Annual Meetings of Society of Medical Decision Making (SMDM 2012), Annual Symposium of the American Medical Informatics Association (AMIA-2013), International Conference on the Foundation of Utility and Risk (FUR 2014).

Academic Awards

2003	School of Business's Best Dissertation Award
1996-98	Australian Government Postgraduate Scholarship
1980-85	Russian Government Undergraduate Scholarship

Graduate Coursework

GPA 3.84/4

Probability/Statistics Statistics for Business Research; Intermediate Statistics; Statistical Theory; Time Series Analysis; Stochastic Adaptive Control; Introduction to Stochastic Processes;

Decision Analysis Uncertain Reasoning; Belief Functions Theory; Theory of Hints; Agent-based Modeling; Games Theory; Multiple Criteria Decision Making;

Economics/Finance/Organization Microeconomics; Macroeconomics; Financial Theory and Corporate Policy; Organization Behavior; Organization Theory;

Programming skills

Scientific computing Matlab, Mathematica and Stata

Languages Java, C++, SQL, Python, XML

Software development tools Eclipse, ClearCase, CruiseControl, AntScripts, CharmNT

Fairfax, VA, July 9, 2015