

## Pradeep Reddy VARAKANTHAM

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**Citizenship:** Indian

## Education

Sep 2003 - Feb 2007	Computer Science, Doctor of Philosophy (PhD), University of Southern California
Sep 2003 - Jun 2005	Computer Science, Master of Science (MS), University of Southern California
Sep 1998 - Jun 2002	Computer Science, Bachelors in Technology (BTech), IIT Hyderabad

## Position(s) Held

Jul 2009 - Now	Assistant Professor School of Information Systems Singapore Management University
Mar 2007 - Jun 2009	Post Doctoral Fellow Computer Science Department Carnegie Mellon University (CMU)
2002 - 2003	Developer Divine Inc

## Research Interests

1. Planning under Uncertainty: Markov Decision Problems (MDPs), Partially Observable MDPs, Decentralized MDPs and POMDPs, Influence Maximization, Online Matching
2. Game Theory: Congestion Games, Stochastic Games, Selfish Routing, Behavioral Models
3. Learning: Reinforcement Learning (RL), Deep Learning and Inverse RL
4. Scheduling under uncertainty: Resource Constrained Project Scheduling Problems (RCPSP) with durational uncertainty and Selfish RCPSPs

## Awards, Recognition and Honors

1. Invited to give the Early Career Spotlight Talk at IJCAI 2016. Selected by IJCAI Program Committee., 2016 - 2016
2. Nominated and Elected to the IFAAMAS Board of Directors, 2016 - 2022
3. Invited speaker in the IDEAS (Issues with Deployment of Emerging Agent-based Systems) workshop at AAMAS 2016, 2016 - 2016

4. Invited to contribute a AI Magazine column on AI research in Singapore., 2016 - 2016
5. Finalist for the best Senior Program Committee (SPC) Member at the International Conference on Autonomous Agents and Multi-Agent Systems, AAMAS 2013. , 2013 - 2013
6. Our paper titled "Caching Schemes for DCOP Search Algorithms" was nominated for Jay Modi Best student paper award at AAMAS, 2009. (5 out of 692 student papers), May 2009 - May 2010

## Grants

1. PI: Grant from Ministry of Home Affairs on Safety and Security Issues. , August 2016 - July 2018  
Amount: 620000
2. Moving beyond data insights: Optimizing dynamics in Safety and Security Networks, January 2017 - December 2019  
Amount: 680000
3. PI: Grant from SMART Future Mobility on "Sequential Decision Making for Matching of Supply and Demand"., 2016 - 2017  
Amount: 50000
4. Co-PI: Grant from National Research Foundation on Urban Management. I contributed the part about "Safety and Security in Urban Environments", 2014 - 2019  
Amount: SGD 13,000,000
5. PI: Grant from SMART Future Mobility centre on "Stochastic Selfish Routing"., November 2013 - March 2015  
Amount: 200000
6. PI: Grant from SMART Future Mobility for project on "Decentralized Decision Support to Improve Performance of a Taxi Fleet"., March 2011 - March 2013  
Amount: SGD 136000
7. PI: Grant from DSO Labs for project on "Active Malware Analysis using Stochastic Games", November 2010 - November 2013  
Amount: SGD 202000
8. PI: Grant from AFOSR (Air Force Science Research) in US for project on "Enhancing Organizations Using POMDPs", 1 February 2009 - 31 May 2009  
Amount: USD 85000

## Thesis

1. Towards quality bounded and efficient planning in partially observable domains. Doctoral thesis guided by Prof. Milind Tambe. Thesis Committee: Manuela Veloso, Sven Koenig, Fernando Ordonez and Stacy Marsella., September 2003 - February 2007

## Journal Article

1. "Dynamic Repositioning to Reduce Lost Demand in Bike Sharing Systems", by Supriyo Ghosh, Pradeep Varakantham, Yossiri Adulyasak, Patrick Jaillet, 03/2017, *Journal of Artificial Intelligence Research*. (Forthcoming, Peer-Reviewed)
2. "An Extended Study on Addressing Defender Teamwork while Accounting for Uncertainty in Attacker Defender Games using Iterative Dec-MDPs", by SHIEH, Eric; JIANG, Albert Xin; YADAV, Amulya; VARAKANTHAM, Pradeep Reddy; TAMBE, Milind, 01/2016, *Multiagent and Grid*

*Systems*, 11, 4, 189 - 226, <http://dx.doi.org/10.3233/MGS-150236>. (Published, Peer-Reviewed)

3. "Robust execution strategies for project scheduling with unreliable resources and stochastic durations", by FU, Na; LAU, Hoong Chuin; VARAKANTHAM, Pradeep, 12/2015, *Journal of Scheduling*, 18, 6, 607 - 622, <http://doi.org/10.1007/s10951-015-0425-1>. (Published, Peer-Reviewed)
4. "TESLA: An Extended Study of an Energy-saving Agent that Leverages Schedule Flexibility", by Kwak, Jun Young; Varakantham, Pradeep Reddy; Maheswaran, Rajiv; Tambe, Milind; Becerik-Gerber, Burcin, 01/2013, *Autonomous Agents and Multi-Agent Systems*, 28, 4, <http://dx.doi.org/10.1007/s10458-013-9234-0>. (Published, Peer-Reviewed)
5. "Coordinating occupant behavior for building energy and comfort management using multi-agent systems", by Klein, Laura; Kwak, Jun Young; Kavulya, Geoffrey; Jazizadeh, Farrokh; Becerik-Gerber, Burcin; VARAKANTHAM, Pradeep; Tambe, Milind, 03/2012, *Automation in Construction*, 22, 525 - 536, <http://doi.org/10.1016/j.autcon.2011.11.012>. (Published, Peer-Reviewed)
6. "Robust local search for solving RCPSP/max with durational uncertainty", by FU, Na; LAU, Hoong Chuin; VARAKANTHAM, Pradeep; XIAO, Fei, 01/2012, *Journal of Artificial Intelligence Research*, 43, 43 - 86, <http://www.jair.org/papers/paper3424.html>. (Published, Peer-Reviewed)
7. "Introducing Communication in Dis-POMDPs with Locality of Interaction", by Tasaki, Makoto; Yabu, Yuichi; Iwanari, Yuki; Yokoo, Makoto; Marecki, Janusz; VARAKANTHAM, Pradeep Reddy; Tambe, Milind, 01/2010, *Web Intelligence and Agent Systems*, 8, 3, 303 - 311, <http://dx.doi.org/10.3233/WIA-2010-0193>. (Published, Peer-Reviewed)
8. "Privacy Loss in Distributed Constraint Reasoning: A Quantitative Framework for Analysis and Its Applications", by Maheswaran, Rajiv; Pearce, Jonathan; Bowring, Emma; Varakantham, Pradeep Reddy; Tambe, Milind, 01/2006, *Autonomous Agents and Multi-Agent Systems*, 13, 1, 27 - 60, <http://dx.doi.org/10.1007/s10458-006-5951-y>. (Published, Peer-Reviewed)

## Conference Proceedings Article

1. "Decentralized Planning in Stochastic Environments with Submodular Rewards", by Rajiv Ranjan Kumar, Pradeep Varakantham and Akshat Kumar, 02/2017, *AAAI Conference on Artificial Intelligence, AAAI-17*, San Francisco. (Published, Peer-Reviewed)
2. "An intelligent system for personalized conference event recommendation and scheduling", by GUNAWAN, Aldy; LAU, Hoong Chuin; VARAKANTHAM, Pradeep; WANG, Wenjie, 09/2016, *ECAI 2016: 22nd European Conference on Artificial Intelligence, 29 August-2 September 2016, The Hague*, 1797 - 1802, Amsterdam: IOS Press, <http://doi.org/10.3233/978-1-61499-672-9-1797>. (Published, Peer-Reviewed)
3. "Detecting Communities using Coordination Games", by Radhika Arava and Pradeep Varakantham, 08/2016, *European Conference on Artificial Intelligence, ECAI*, Hague, Netherlands. (Published, Peer-Reviewed)
4. "Scalable Greedy Algorithms for Task/Resource Constrained Multi-Agent Stochastic Planning", by Pritee Agrawal, Pradeep Varakantham and William Yeoh, 07/2016, *International Joint Conference on Artificial Intelligence (IJCAI-16)*, New York: AAAI Press. (Published, Peer-Reviewed)
5. "Robust Repositioning to Counter Unpredictable Demand in Bike Sharing Systems", by Supriyo Ghosh, Michael Trick and Pradeep Varakantham, 07/2016, *International Joint Conference on Artificial Intelligence (IJCAI-16)*, New York: AAAI Press. (Published, Peer-Reviewed)
6. "Sequential Decision Making for Improving Efficiency in Urban Environments", by Pradeep Varakantham, 07/2016, *International Joint Conference on Artificial Intelligence (IJCAI-16). Early Career Spotlight Invited Talk.*, New York: AAAI Press. (Published, Peer-Reviewed)

7. "Strategic Planning for Setting up Base Stations In Emergency Medical Systems", by GHOSH, Supriyo; VARAKANTHAM, Pradeep, 06/2016, *Proceedings of the Twenty-Sixth International Conference on Automated Planning and Scheduling (ICAPS 2016)*, London. (Published, Peer-Reviewed)
8. "Robust partial order schedules for RCPSP/max with durational uncertainty", by FU, Na; VARAKANTHAM, Pradeep; LAU, Hoong Chuin, 06/2016, *Proceedings of the 26th International Conference on Automated Planning and Scheduling: London, June 12-17, 2016*, 124 - 130, Menlo Park, CA: AAAI. (Published, Peer-Reviewed)
9. "Robust Influence Maximization", by Lowaloekekar, Meghna; Varakantham, Pradeep; Kumar, Akshat, 05/2016, *International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS-16). Poster Paper.*, Singapore: IFAAMAS. (Published, Peer-Reviewed)
10. "Online Spatio-Temporal Matching in Stochastic and Dynamic Domains", by LOWALEKAR, Meghna; VARAKANTHAM, Pradeep Reddy; JAILLET, Patrick, 02/2016, *Proceedings of the AAAI Conference on Artificial Intelligence 2016: Phoenix Arizona, February 12-17, 2016*, Menlo Park, CA: AAAI Press. (Published, Peer-Reviewed)
11. "NLU Framework for Voice Enabling Non-Native Applications on Smart Devices", by LANKA, Soujanya; PANTHANIA, Deepika; KUSHALAPPA, Pooja; VARAKANTHAM, Pradeep Reddy, 02/2016, *Proceedings of the AAAI Conference on Artificial Intelligence 2016: Phoenix Arizona, February 12-17, 2016*, Menlo Park, CA: AAAI Press. (Published, Peer-Reviewed)
12. "A proactive sampling approach to project scheduling under uncertainty", by VARAKANTHAM, Pradeep; FU, Na; LAU, Hoong Chuin, 02/2016, *Proceedings of the AAAI Conference on Artificial Intelligence 2016: Phoenix, Arizona, February 12-17, 2016*, 3195 - 3201, Menlo Park, CA: AAAI Press. (Published, Peer-Reviewed)
13. "Solving Risk-Sensitive POMDPs With and Without Cost Observations", by HOU, Ping; YEOH, William; VARAKANTHAM, Pradeep Reddy, 02/2016, *Proceedings of the AAAI Conference on Artificial Intelligence 2016: Phoenix Arizona, February 12-17, 2016*, Menlo Park, CA: AAAI Press. (Published, Peer-Reviewed)
14. "Robust Decision Making for Stochastic Network Design", by KUMAR, Akshat; SINGH, Arambam James; VARAKANTHAM, Pradeep Reddy; SHELDON, Daniel, 02/2016, *Proceedings of the AAAI Conference on Artificial Intelligence 2016: Phoenix Arizona, February 12-17, 2016*, Menlo Park, CA: AAAI Press. (Published, Peer-Reviewed)
15. "Incremental DCOP Search Algorithms for Solving Dynamic DCOP Problems", by YEOH, William; VARAKANTHAM, Pradeep Reddy; SUN, Xiaoxun; KOENIG, Sven, 12/2015, *Web Intelligent and Intelligent Agent Technologies, WI-IAT, 2015*, 1 - 8, Singapore: IEEE, <http://idm-lab.org/bib/abstracts/Koen15k.html>. (Published, Peer-Reviewed)
16. "Dynamic Redeployment to Counter Congestion or Starvation in Vehicle Sharing Systems", by SUPRIYO GHOSH; VARAKANTHAM, Pradeep Reddy; ADULYASAK, Yossiri; JAILLET, Patrick, 06/2015, *Proceedings of the Twenty-Fifth International Conference on Automated Planning and Scheduling: Jerusalem, Israel, June 7-11, 2015*, 79 - 87, Menlo Park, CA: AAAI Press, <http://www.aaai.org/ocs/index.php/ICAPS/ICAPS15/paper/view/10602>. (Published, Peer-Reviewed)
17. "DIRECT: A scalable approach for route guidance in Selfish Orienteering Problems", by VARAKANTHAM, Pradeep; MOSTAFA, Hala; FU, Na; LAU, Hoong Chuin, 05/2015, *AAMAS '15: Proceedings of the 14th International Conference on Autonomous Agents and Multiagent Systems: 4-8 May, Istanbul*, 483 - 491, Richland, SC: AAMAS, <http://dl.acm.org/citation.cfm?id=2772942>. (Published, Peer-Reviewed)
18. "Near-Optimal Decentralized Power Supply Restoration in Smart Grids", by AGRAWAL, Pritee; KUMAR, Akshat; VARAKANTHAM, Pradeep Reddy, 05/2015, *AAMAS '15: Proceedings of the*

*2015 International Conference on Autonomous Agents and Multiagent Systems: Istanbul, Turkey, May 4-8, 1275 - 1283, Richland, SC: IFAAMAS, <http://dl.acm.org/citation.cfm?id=2773315>. (Published, Peer-Reviewed)*

19. "Probabilistic Inference Based Message-Passing for Resource Constrained DCOPs", by GHOSH, Supriyo; KUMAR, Akshat; VARAKANTHAM, Pradeep Reddy, 01/2015, *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, 411 - 417, Buenos Aires, Argentina: AAAI Press, <http://dblp.org/rec/conf/ijcai/GhoshKV15>. (Published, Peer-Reviewed)
20. "Solving Uncertain MDPs with Objectives that are Separable over Instantiations of Model Uncertainty", by ADULYASAK, Yossiri; VARAKANTHAM, Pradeep Reddy; AHMED, Asrar; JAILLET, Patrick, 01/2015, *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence: 25-30 January 2015, Austin, Texas USA*, 3454 - 3460, Palo Alto, CA: AAAI Press, <http://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/view/9843>. (Published, Peer-Reviewed)
21. "Risk based optimization for improving emergency medical systems", by SAISUBRAMANIAN, Sandhya; VARAKANTHAM, Pradeep; LAU, Hoong Chuin, 01/2015, *Proceedings of the Twenty-Ninth AAAI Conference on Artificial Intelligence: 25-30 January 2015, Austin, Texas*, 702 - 708, Palo Alto, CA: AAAI Press, <https://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/viewFile/9427/9316>. (Published, Peer-Reviewed)
22. "Unleashing Dec-MDPs in Security Games: Enabling Effective Defender Teamwork", by Shieh, Eric; Jiang, Albert; Yadav, Amulya; VARAKANTHAM, Pradeep Reddy; Tambe, Milind, 08/2014, *ECAI 2014: 21st European Conference on Artificial Intelligence, 18-22 August 2014, Prague, Czech Republic: Proceedings*, 819 - 824, Amsterdam: IOS Press, <http://teamcore.usc.edu/pubDetails.aspx?id=739>. (Published, Peer-Reviewed)
23. "STREETS: Game-Theoretic Traffic Patrolling with Exploration and Exploitation", by Brown, Matthew; Saisubramanian, Sandhya; VARAKANTHAM, Pradeep Reddy; Tambe, Milind, 07/2014, *Proceedings of Twenty-Sixth Innovative Applications in Artificial Intelligence Conference: 29-31 July 2014, Quebec City*, 2966 - 2971, Palo Alto, CA: AAAI Press, <http://www.aaai.org/ocs/index.php/IAAI/IAAI14/paper/view/8301>. (Published, Peer-Reviewed)
24. "Decentralized Stochastic Planning with Anonymity in Interactions", by VARAKANTHAM, Pradeep Reddy; Adulyasak, Yossiri; Jaillet, Patrick, 07/2014, *Proceedings of Twenty Eighth AAAI Conference of Artificial Intelligence: 27-31 July 2014, Québec City*, 2505 - 2511, Palo Alto, CA: AAAI Press, <https://www.aaai.org/ocs/index.php/AAAI/AAAI14/paper/view/8525>. (Published, Peer-Reviewed)
25. "On Understanding Diffusion Dynamics of Patrons at a Theme Park", by DU, Jiali; KUMAR, Akshat; VARAKANTHAM, Pradeep Reddy, 05/2014, *AAMAS '14: Proceedings of the 2014 International Conference on Autonomous Agents and Multi-agent Systems: May 5-9, 2014, Paris*, 1501 - 1502, Richland, SC: AAMAS, <http://dl.acm.org/citation.cfm?id=2615731.2616032>. (Published, Peer-Reviewed)
26. "Building THINC: User Incentivization and Meeting Rescheduling for Energy Savings", by Kwak, Jun Young; Kar, Debarun; Haskell, William; VARAKANTHAM, Pradeep Reddy; Tambe, Milind, 01/2014, *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2014), May, 5-9, 2014, Paris*, 925 - 932, Richland, SC: AAMAS, <http://aamas2014.lip6.fr/proceedings/aamas/p925.pdf>. (Published, Peer-Reviewed)
27. "Revisiting Risk-Sensitive MDPs: New Algorithms and Results", by Hou, Ping; Yeoh, William; VARAKANTHAM, Pradeep Reddy, 01/2014, *Proceedings of the Twenty-Fourth International Conference on Automated Planning and Scheduling (ICAPS-14): 21-26 June 2014, Portsmouth, New Hampshire*, 136 - 144, Palo Alto, CA: AAAI Press, <http://aaai.org/ocs/index.php/ICAPS/ICAPS14/paper/view/7798>. (Published, Peer-Reviewed)
28. "An agent-based simulation approach to experience management in theme parks", by CHENG, Shih-Fen; LIN, Larry Junjie; DU, Jiali; LAU, Hoong Chuin; VARAKANTHAM, Pradeep, 12/2013,

- WSC '13: *Proceedings of the 2013 Winter Simulation Conference: December 8-11, 2013, Washington DC, 1527 - 1538*, Piscataway, NJ: IEEE, <http://doi.org/10.1109/WSC.2013.6721536>. (Published, Peer-Reviewed)
29. "Budgeted personalized incentive approaches for smoothing congestion in resource networks", by VARANTHAM, Pradeep; FU, Na; YEOH, William; CHENG, Shih-Fen; LAU, Hoong Chuin, 11/2013, *Algorithmic Decision Theory: Third International Conference, ADT 2013, Bruxelles, Belgium, November 12-14, 2013, Proceedings*, 375 - 386, Cham: Springer Verlag, [http://doi.org/10.1007/978-3-642-41575-3\\_29](http://doi.org/10.1007/978-3-642-41575-3_29). (Published, Peer-Reviewed)
  30. "Scalable randomized patrolling for securing rapid transit networks", by VARAKANTHAM, Pradeep; LAU, Hoong Chuin; YUAN, Zhi, 07/2013, *Proceedings of the Twenty-Fifth Innovative Applications of Artificial Intelligence Conference IAAI 2013: Bellevue, WA, July 14-18, 2013*, 1563 - 1568, Palo Alto, CA: AAAI Press, <http://www.aaai.org/ocs/index.php/IAAI/IAAI13/paper/download/6203/6436>. (Published, Peer-Reviewed)
  31. "TESLA: An Energy-saving Agent that Leverages Schedule Flexibility", by Kwak, Jun Young; Varakantham, Pradeep Reddy; Maheswaran, Rajiv; Becerik-Gerber, Burcin; Tambe, Milind, 05/2013, *Proceedings of the 12th International Conference on Autonomous Agents and Multiagent Systems, AAMAS'13, May 6-10, 2013, St. Paul, MN, USA.*, 965 - 972, Minnesota, USA. (Published, Peer-Reviewed)
  32. "Optimization Approaches for Solving Chance Constrained Stochastic Orienteering Problems", by Varakantham, Pradeep Reddy; KUMAR, Akshat; NG, Wee Keong, 01/2013, *Algorithmic Decision Theory: Third International Conference, ADT 2013, Bruxelles, Belgium, November 12-14, 2013, Proceedings*, 387 - 398, Brussels, Belgium: Springer Verlag, [http://dx.doi.org/10.1007/978-3-642-41575-3\\_30](http://dx.doi.org/10.1007/978-3-642-41575-3_30). (Published, Peer-Reviewed)
  33. "Dynamic stochastic orienteering problems for risk-aware applications", by LAU, Hoong Chuin; YEOH, William; VARAKANTHAM, Pradeep; NGUYEN, Duc Thien, 08/2012, *Proceedings of the Twenty-Eighth Conference Conference on Uncertainty in Artificial Intelligence (2012): August 14-18 2012, Catalina Island, CA*, 448 - 458, Corvallis, OR: AUA Press. (Published, Peer-Reviewed)
  34. "Uncertain Congestion Games with Assorted Human Agent Populations", by Ahmed, Asrar; Varakantham, Pradeep Reddy; CHENG, Shih-Fen, 08/2012, *Uncertainty in Artificial Intelligence: Proceedings of the Twenty-eighth Conference: August 15-17, 2012, Catalina Island, United States*, 44 - 53, Corvallis, OR: AUA Press, <http://worldcat.org/isbn/9780974903989>. (Published, Peer-Reviewed)
  35. "Decision Support for Agent Populations in Uncertain and Congested Environments", by VARAKANTHAM, Pradeep Reddy; CHENG, Shih-Fen; GORDON, Geoff; AHMED, Asrar, 07/2012, *Proceedings of the Twenty-sixth AAAI Conference on Artificial Intelligence, 22-26 July 2010, Toronto, Ontario*, 1471 - 1477, Menlo Park, CA: AAAI Press, <http://www.aaai.org/ocs/index.php/AAAI/AAAI12/paper/view/5030>. (Published, Peer-Reviewed)
  36. "Lagrangian relaxation for large-scale multi-agent planning", by GORDON, Geoff; VARAKANTHAM, Pradeep; YEOH, William; LAU, Hoong Chuin; CHENG, Shih-Fen, 06/2012, *AAMAS '12: Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems: June 4-8, Valencia, Spain*, 1227 - 1228, Richland, SC: IFAAMAS, [http://www.ifaamas.org/Proceedings/aamas2012/papers/Z1\\_4.pdf](http://www.ifaamas.org/Proceedings/aamas2012/papers/Z1_4.pdf). (Published, Peer-Reviewed)
  37. "Active Malware Analysis using Stochastic Games", by WILLIAMSON, Simon; VARAKANTHAM, Pradeep; GAO, Debin; ONG, Chen Hui, 06/2012, *Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2012): Valencia, Spain, June 4-8*, 29 - 36, Richland, SC: IFAAMAS, <http://dl.acm.org/citation.cfm?id=2343580>. (Published, Peer-Reviewed)

38. "Delayed Observation Planning in Partially Observable Domains", by Varakantham, Pradeep Reddy; Marecki, Janusz, 06/2012, *Proceedings of the Eleventh International Conference on Autonomous Agents and Multi-Agent Systems, published by ACM, Valencia, Spain.* (Published, Peer-Reviewed)
39. "Prioritized Shaping of Models for Solving DEC-POMDPs", by Varakantham, Pradeep Reddy; Yeoh, William; Velagapudi, Prasanna; Scerri, Paul, 06/2012, *AAMAS '12: Proceedings of the 11th International Conference on Autonomous Agents and Multiagent Systems, June 2012, Valencia Spain, 1269 - 1270, Valencia, Spain: ACM, <http://dl.acm.org/citation.cfm?id=2343896.2343957>.* (Published, Peer-Reviewed)
40. "Adaptive Decision Support for Structured Organizations: A Case for OrgPOMDPs", by Varakantham, Pradeep Reddy; Schurr, Nathan; Carlin, Alan; Amato, Christopher, 05/2011, *Proceeding: AAMAS '11 The 10th International Conference on Autonomous Agents and Multiagent Systems - Volume 3, 1149 - 1150, Richland, SC: International Foundation for Autonomous Agents and Multiagent Systems, <http://dl.acm.org/citation.cfm?id=2034396.2034461>.* (Published, Peer-Reviewed)
41. "Incremental DCOP Search Algorithms for Solving Dynamic DCOP Problems", by YEOH, William; VARAKANTHAM, Pradeep; SUN, Xiaoxun; KOENIG, Sven, 05/2011, *AAMAS 2011: Proceedings of 10th International Conference on Autonomous Agents and Multiagent Systems: May 2-6, 2011, Taipei, Taiwan, 1069 - 1070, Richland, SC: IFAAMAS, <http://dl.acm.org/citation.cfm?id=2034422>.* (Published, Peer-Reviewed)
42. "Decentralized Decision Support for an Agent Population in Dynamic and Uncertain Domains", by VARAKANTHAM, Pradeep Reddy; CHENG, Shih-Fen; NGUYEN, Thi Duong, 05/2011, *AAMAS-11: Proceedings of the Tenth International Joint Conference on Autonomous Agents and MultiAgent Systems: Taipei, Taiwan, May 2-6, 2011, 1147 - 1148, Richland, SC: IFAAMAS, <http://dl.acm.org/citation.cfm?id=2034460>.* (Published, Peer-Reviewed)
43. "Effect of human biases on human-agent teams", by Paruchuri, Praveen; Varakantham, Pradeep Reddy; Scerri, Paul, 09/2010, *IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT), 2010 : [joint conference] ; Aug. 31, 2010 - Sept. 3, 2010, Toronto, Ontario, Canada ; proceedings ; [including workshop papers], 327 - 334, Piscataway, N: IEEE, <http://dx.doi.org/10.1109/WI-IAT.2010.104>.* (Published, Peer-Reviewed)
44. "A Decision Theoretic Approach to Data Leakage Prevention", by Marecki, Janusz; Srivastava, Mudhakar; Varakantham, Pradeep Reddy, 08/2010, *SocialCom 2010 : proceedings, the second IEEE International Conference on Social Computing : PASSAT 2010, the second IEEE International Conference on Privacy, Security, Risk, and Trust : Minneapolis, Minnesota, USA, August 20-22, 2010., Los Alamitos, Calif.: IEEE.* (Published, Peer-Reviewed)
45. "Towards finding robust execution strategies for RCPSP/max with durational uncertainty", by FU, Na; VARAKANTHAM, Pradeep; LAU, Hoong Chuin, 05/2010, *ICAPS 2010: Proceedings of the Twentieth International Conference on Automated Planning and Scheduling: Toronto, Canada, May 12-16, 2010, 73 - 80, Menlo Park, CA: AAAI Press, <http://www.aaai.org/ocs/index.php/ICAPS/ICAPS10/paper/view/1425>.* (Published, Peer-Reviewed)
46. "Exploiting Coordination Locales in Distributed POMDPS via Social Model", by Varakantham, Pradeep Reddy; Kwak, Jun Young; Taylor, Matthew; Marecki, Janusz; Scerri, Paul; Tambe, Milind, 09/2009, *International Conference on Automated Planning and Scheduling (ICAPS), 51 - 58, Thessaloniki, Greece: AAAI, <http://aaai.org/ocs/index.php/ICAPS/ICAPS09/paper/view/733>.* (Published, Peer-Reviewed)
47. "Caching Schemes for DCOP Search Algorithms", by Yeoh, William; Varakantham, Pradeep Reddy; Koenig, Sven, 01/2009, *Proceeding: AAMAS '09 Proceedings of The 8th International Conference on Autonomous Agents and Multiagent Systems - Volume 1, 609 - 616, Richland, SC: International Foundation for Autonomous Agents and Multiagent Systems, <http://portal.acm.org/citation.cfm?id=1558098>.* (Published, Peer-Reviewed)

48. "Linear Relaxation Techniques for Task Management in Uncertain Settings", by Varakantham, Pradeep Reddy; Smith, Stephen, 09/2008, *Proceedings of the Eighteenth International Conference on Automated Planning and Scheduling : [Sydney, Australia, September 14-18, 2008]*, Menlo Park, Calif.: AAAI Press, <https://pal.sri.com/CALOfiles/cstore/PAL-publications/radar/2008/ICAPS08-045.pdf>. (Published, Peer-Reviewed)
49. "Not All Agents are Equal: Scaling up Distributed POMDPs for Agent Networks", by Marecki, Janusz; GUPTA, Tapan; Varakantham, Pradeep Reddy; Tambe, Milind; Yokoo, Makoto, 05/2008, *Proceedings of the 7th international joint conference on autonomous agents and multiagent systems, AAMAS 2008, Estoril, Portugal, 12-16.05.2008.*, 485 - 492, New York (NY): ACM, <http://dl.acm.org/citation.cfm?id=1402453>. (Published, Peer-Reviewed)
50. "Letting loose a SPIDER on a network of POMDPs: Generating quality guaranteed policies", by Varakantham, Pradeep Reddy; Marecki, Janusz; Yokoo, Makoto; Tambe, Milind, 01/2007, *Proceedings of the Sixth International Joint Conference on Autonomous Agents and Multi Agent Systems, AAMAS, ACM*, <http://dx.doi.org/10.1145/1329125.1329388>. (Published, Peer-Reviewed)
51. "Towards efficient computation of quality bounded solutions in POMDPs", by Varakantham, Pradeep Reddy; Maheswaran, Rajiv; GUPTA, Tapan; Tambe, Milind, 01/2007, *Proceedings of the Twentieth International Joint Conference on Artificial Intelligence, IJCAI*, 2683 - 2643, <http://portal.acm.org/citation.cfm?id=1625700>. (Published, Peer-Reviewed)
52. "Winning back the CUP for Distributed POMDPs: Planning over continuous belief spaces", by Varakantham, Pradeep Reddy; Nair, Ranjit; Tambe, Milind; Yokoo, Makoto, 05/2006, *AAMAS'06 : proceedings of the Fifth International Joint Conference on Autonomous Agents and Multiagent Systems Hakodate, Japan, May 8-12, 2006*, New York: ACM, <http://portal.acm.org/citation.cfm?id=1160683>. (Published, Peer-Reviewed)
53. "Exploiting Belief Bounds: Practical POMDPs for Personal Assistant Agents", by Varakantham, Pradeep Reddy; Maheswaran, Rajiv; Tambe, Milind, 07/2005, *AAMAS 2005 : the Fourth International Joint Conference on Autonomous Agents and Multiagent Systems : Utrecht University, the Netherlands, July 25-29, 2005*, 978 - 985, New York: ACM, <http://dx.doi.org/10.1145/1082473.1082621>. (Published, Peer-Reviewed)
54. "Conflicts in teamwork: Hybrids to the rescue", by Tambe, Milind; Bowring, Emma; Jung, H.; Kaminka, G.; Maheswaran, Rajiv; Marecki, Janusz; Modi, P. J.; Nair, Ranjit; Pearce, Jonathan; VARAKANTHAM, Pradeep Reddy, 07/2005, *AAMAS 2005 : the Fourth International Joint Conference on Autonomous Agents and Multiagent Systems : Utrecht University, the Netherlands, July 25-29, 2005*, New York: ACM, <http://dx.doi.org/10.1145/1082473.1082474>. (Published, Peer-Reviewed)
55. "Valuations of Possible States (VPS): A Unifying Quantitative Framework for Evaluating Privacy in Collaboration", by Maheswaran, Rajiv; Pearce, Jonathan; Varakantham, Pradeep Reddy; Bowring, Emma; Tambe, Milind, 07/2005, *Proceedings of the 4th International Conference on Autonomous Agents and Multi Agent Systems, AAMAS*, 1030 - 1037, Utrecht, Netherlands: ACM, <http://dx.doi.org/10.1145/1082473.1082629>. (Published, Peer-Reviewed)
56. "Networked Distributed POMDPs: A Synthesis of Distributed Constraint Optimization and POMDPs", by Nair, Ranjit; Varakantham, Pradeep Reddy; Tambe, Milind; Yokoo, Makoto, 07/2005, *Proceedings of the Twentieth National Conference on Artificial Intelligence and the Seventeenth Innovative Applications of Artificial Intelligence Conference : July 9-13, 2005, Pittsburgh, Pennsylvania*, 133 - 139, Menlo Park: AAAI Press, <http://portal.acm.org/citation.cfm?id=1619356>. (Published, Peer-Reviewed)
57. "Taking DCOP to the Real World: Efficient Complete Solutions for Distributed Event Scheduling", by Maheswaran, Rajiv; Tambe, Milind; Bowring, Emma; Pearce, Jonathan; VARAKANTHAM, Pradeep Reddy, 07/2004, *Proceedings of the third International Joint Conference on Autonomous Agents and Multiagent Systems : AAMAS 2004 : New York City, New York, USA, 19-23 July 2004*



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## Conference Paper

1. "Interacting Knapsack Problem in Designing Resource Bundles", by NGUYEN, Truong Huy D.; VARAKANTHAM, Pradeep; LAU, Hoong Chuin; CHENG, Shih-Fen, 08/2013, Metaheuristics International Conference 10th MIC 2013, August 5-8, Singapore. (Published, Peer-Reviewed)
2. "Regret based Robust Solutions for Uncertain Markov Decision Processes", by Ahmed, Asrar; Varakantham, Pradeep Reddy; Adulyasak, Yossiri; Jaillet, Patrick, 01/2013, Advances in Neural Information Processing Systems (NIPS), Lake Tahoe, San Francisco. (Published, Peer-Reviewed)
3. "Distributed Model Shaping for Scaling to Decentralized POMDPs with hundreds of agents", by Velagapudi, Prasanna; Varakantham, Pradeep Reddy; Sycara, Katia; Scerri, Paul, 05/2011, International Joint Conference on Autonomous Agents and Multiagent Systems, Taipei. (Published, Peer-Reviewed)
4. "Analyzing the Impact of Human Bias on Human-Agent Teams in Resource Allocation", by Paruchuri, Praveen; Varakantham, Pradeep Reddy; Sycara, Katia; Scerri, Paul, 05/2010, International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS), Toronto, Canada, <http://www.cs.cmu.edu/~pscerri/papers/ParuchuriAAMAS10.pdf>. (Published, Peer-Reviewed)
5. "Risk-Sensitive Planning in Partially Observable", by Marecki, Janusz; Varakantham, Pradeep Reddy, 01/2010, International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS), Toronto, Canada. (Published, Peer-Reviewed)
6. "Hybrids in Multiagent Teamwork", by Paruchuri, Praveen; Bowring, Emma; Nair, Ranjit; Pearce, Jonathan; Schurr, Nathan; Tambe, Milind; VARAKANTHAM, Pradeep Reddy; Maheswaran, Rajiv, 01/2006, Communications of the Computer Society of India, <http://teamcore.usc.edu/papers/2006/tambe.pdf>. (Published, Peer-Reviewed)

## Thesis Student (Ph. D)

1. Supervisor of SMU PhD student Meghna Lowalekar. , 2015 - Now
2. Supervisor of SMU PhD student Tanvi Verma., 2015 - Now
3. Supervisor of SMU PhD student Supriyo Ghosh. Tentative Thesis Topic: "Dynamic Multi-Step Matching in Bike Sharing Systems", 2013 - Now
4. Supervisor of SMU PhD student Pritee Agarwal. Tentative Thesis Topic: "Scalable Multi-Agent Coordination under Uncertainty and Agent Failures", 2013 - Now
5. Co-supervisor and Thesis committee member of of SMU PhD student Na Fu. Thesis: "Robust Execution Strategy for Scheduling under Uncertainty"., 2009 - 2012
6. Thesis committee member and Research Collaborator of Carnegie Mellon Student Prasanna Velagapudi. Thesis: "Distributed Planning under Uncertainty for Large Teams"., 2011 - 2013
7. Co-supervisor and Thesis committee member of USC (University of Southern California) PhD student Jun-young Kwak. Thesis: "The Power of Flexibility: Autonomous Agents that Conserve Energy in Commercial Buildings", 2009 - 2013

## **Courses Taught - Ph. D**

1. Planning and Learning in Intelligent Systems (1 section each year). Elective., 2013 - Now

## **Courses Taught - Undergraduate**

1. Computer as an Analysis Tool, CAT (3 sections each year). Core Course., 2009 - Now

## **Conducting Workshops**

1. Co-Chair for the workshop on "Optimization in Multi-Agent Systems (OptMAS)" at AAMAS, 2016 - 2016
2. Co-chair for the workshop on "Behavioral, Economic and Computational Intelligence for Security" at IJCAI, 2015 - 2015
3. Chaired the workshop on "Protecting Critical Infrastructure using Strategic Planning and Analytics", 24 October 2012 - 25 October 2012
4. Chaired the AAAI fall symposia on "Multi-Agent Coordination under Uncertainty", 4 November 2011 - 6 November 2011
5. Co-Chaired the workshop on "Multi-Agent Sequential Decision Making, MSDM" in 2007 and 2008 as part of AAMAS 2007 and 2008., May 2007 - May 2008

## **Conference Program Committee and Advisory Services**

1. Chair, Local Organization, International Joint Conference on Autonomous Agents and Multi-Agent Systems, AAMAS-16, 2016 - 2016
2. Chair, Student Abstract and Poster track, AAAI, 2016 - 2016
3. Board Member, Awards Committee (initially), International Foundation of Autonomous Agents and Multi-Agent Systems, 2016 - 2022
4. Program Committee or Senior Program Committee, International Joint Conference on Autonomous Agents and Multi-agent Systems, AAMAS; International Joint Conference on Artificial Intelligence, IJCAI; International Conference on Automated Planning and Scheduling, ICAPS; Conference of Association for Advancement of Artificial Intelligence, AAAI;, 2008 - Now
5. Reviewer, Journal of Artificial Intelligence, JAIR; Journal of Autonomous Agents and Multi-Agent Systems, JAAMAS; Artificial Intelligence Journal, AIJ;, 2009 - Now