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## Education

Ph.D. in Computer Science Aug 2004 – Aug 2010  
 University of Southern California, Los Angeles, CA

M.S. in Computer Science Aug 2004 – May 2007  
 University of Southern California, Los Angeles, CA

M.S. in Mechanical Engineering and Applied Mechanics Aug 2000 – Jul 2004  
 University of Pennsylvania, Philadelphia, PA

B.S.E. in Mechanical Engineering and Applied Mechanics Aug 2000 – Jul 2004  
 University of Pennsylvania, Philadelphia, PA

## Professional Experience

Department of Computer Science and Engineering, Washington University in St. Louis, St. Louis, MO  
*Assistant Professor* Sep 2017 – Current

Department of Computer Science, New Mexico State University, Las Cruces, NM  
*Assistant Professor* Aug 2012 – Aug 2017

School of Information Systems, Singapore Management University, Singapore  
*Research Scientist* May 2011 – Jul 2012  
*Living Analytics Research Center*

Department of Computer Science, University of Massachusetts, Amherst, MA  
*Post-doctoral Research Associate* Sep 2010 – Mar 2011  
*Resource-Bounded Reasoning Laboratory (Shlomo Zilberstein)*

## Honors and Awards

### RESEARCH

- *Early Career Spotlight Talk*, International Joint Conference on Artificial Intelligence (IJCAI) 2018
- *CAREER Award*, National Science Foundation 2016
- *AI's 10 to Watch*, IEEE Intelligent Systems 2015
- *Outstanding Research Assistant Award*, Computer Science, University of Southern California 2009
- *Best Student Paper Award Nomination* for “Caching Schemes for DCOP Search Algorithms,” International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2009

### TEACHING

- *Outstanding Graduate Faculty Award in Mentoring*, Computer Science Graduate Student Organization, New Mexico State University 2015, 2016
- *Outstanding Graduate Faculty Award in Teaching*, Computer Science Graduate Student Organization, New Mexico State University 2013

- *Teaching Assistant Fellow*, Center for Excellence in Teaching, University of Southern California 2009
- *Award for Excellence in Teaching*, Center for Excellence in Teaching, University of Southern California 2008
- *Outstanding Teaching Assistant Award*, Computer Science, University of Southern California 2004, 2007

## Research Grants

- US-Israel Binational Science Foundation. *Communication-Aware Distributed Constraint Optimization Problems: Foundations, Models, and Algorithms*. PI: Roie Zivan; Co-PI: William Yeoh. \$121,590. 2019 – 2022.
- Defense Advanced Research Projects Agency. *Anytime Reasoning and Analysis for Kill-Web Negotiation and Instantiation Across Domains (ARAKNID)*. PI: Brett Benyo; Co-PIs: Mitchell Colby, Paulo Costa, William Yeoh. \$3,492,360. 2019 – 2020.
- Boeing. *Integrated Computational and Cognitive Workflows for Improved Security and Usability*. PI: Alvitta Ottley; Co-PI: William Yeoh. \$501,725. 2019 – 2021.
- National Science Foundation. *RI: Small: Collaborative Research: Preference Elicitation and Device Scheduling for Smart Homes*. PI: William Yeoh. \$299,998. 2018 – 2021.
- Defense Advanced Research Projects Agency. *Mission-Oriented Adaptive Placement of Task and Data (MAP)*. PI: Aaron Paulos; Co-PIs: Soura Dasgupta, Bryan Lyles, Ramesh Sitaraman, William Yeoh. \$6,784,678. 2017 – 2021.
- National Science Foundation. *CAREER: Decentralized Constraint-based Optimization for Multi-Agent Planning and Coordination*. PI: William Yeoh. \$500,000. 2016 – 2021.
- National Science Foundation. *BSF: 2014012: Robust Solutions for Distributed Constraint Optimization Problems*. PI: William Yeoh. \$50,000. 2015 – 2019.
- National Science Foundation. *iCREDITS: Interdisciplinary Center of Research Excellence in Design of Intelligent Technologies for Smartgrids*. PI: Enrico Pontelli; Co-PIs: Sukumar Brahma, Satyajayant Misra, Satishkumar Ranade, William Yeoh. \$4,999,721. 2014 – 2019.

## Publications

### Dissertation

1. William Yeoh. *Speeding Up Distributed Constraint Optimization Search Algorithms*. Ph.D. thesis, University of Southern California, Los Angeles, United States, 2010.  
\*Also appears as a book published by Scholars' Press, ISBN: 3639707214.

### Journal and Magazine Articles

10. Duc Thien Nguyen, William Yeoh, Hoong Chuin Lau, and Roie Zivan. Distributed Gibbs: A Linear-Space Sampling-Based DCOP Algorithm. *Journal of Artificial Intelligence (JAIR)*, 64, pages 705–748, 2019.
9. Ferdinando Fioretto, Enrico Pontelli, and William Yeoh. Distributed Constraint Optimization Problems and Applications: A Survey. *Journal of Artificial Intelligence Research (JAIR)*, 61, pages 723–759, 2018.
8. Ferdinando Fioretto and William Yeoh. AI Buzzwords Explained: Distributed Constraint Optimization Problems. *AI Matters*, 3(4), pages 8–13, 2018.

7. Pradeep Varakantham, Akshat Kumar, Hoong Chuin Lau, and William Yeoh. Risk-Sensitive Stochastic Orienteering Problems for Trip Optimization in Urban Environments. *ACM Transactions on Intelligent Systems and Technology (TIST)*, 9(3), pages 24:1–24:25, 2018.
6. Ferdinando Fioretto, Enrico Pontelli, William Yeoh, and Rina Dechter. Accelerating Exact and Approximate Inference for (Distributed) Discrete Optimization with GPUs. *Constraints*, 23(1), pages 1–43, 2018.
5. Atena M. Tabakhi, William Yeoh, Reza Tourani, Francisco Natividad, and Satyajayant Misra. Communication-Sensitive Pseudo-Tree Heuristics for DCOP Algorithms. *International Journal on Artificial Intelligence Tools (IJAIT)*, 27(7), pages 1860008:1–1860008:24, 2018.
4. Tiep Le, Tran Cao Son, Enrico Pontelli, and William Yeoh. Solving Distributed Constraint Optimization Problems with Logic Programming. *Theory and Practice of Logic Programming (TPLP)*, 17(4), pages 634–683, 2017.
3. Haris Aziz, Elias Bareinboim, Yejin Choi, Daniel Hsu, Shivaram Kalyanakrishnan, Reshef Meir, Suchi Saria, Gerardo I. Simari, Lirong Xia, and William Yeoh. AI’s 10 to Watch. *IEEE Intelligent Systems*, 31(1), pages 56–66, 2016.
2. William Yeoh and Makoto Yokoo. Distributed Problem Solving. *AI Magazine*, 33(3), pages 53–65, 2012.
1. William Yeoh, Ariel Felner, and Sven Koenig. BnB-ADOPT: An Asynchronous Branch-and-Bound DCOP Algorithm. *Journal of Artificial Intelligence Research (JAIR)*, 38, pages 85–133, 2010.

### Conference Papers (Full Papers)

48. Atena M. Tabakhi, William Yeoh, and Makoto Yokoo. Parameterized Heuristics for Incomplete Weighted CSPs with Elicitation Costs. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, to appear, 2019. Acceptance Rate:  $189/781 = 24\%$ .
47. Khoi D. Hoang, Ferdinando Fioretto, William Yeoh, Enrico Pontelli, and Roie Zivan. A Large Neighboring Search Schema for Multi-Agent Optimization. In *Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP)*, pages 688–706, 2018. Acceptance Rate:  $50/114 = 44\%$ .
46. Pritee Agrawal, Pradeep Varakantham, and William Yeoh. Decentralized Planning for Non-dedicated Agent Teams with Submodular Rewards in Uncertain Environments. In *Proceedings of the Conference on Uncertainty in Artificial Intelligence (UAI)*, pages 958–967, 2018. Acceptance Rate:  $104/337 = 31\%$ .
45. Moinul Morshed Porag Chowdhury, Christopher Kiekintveld, Tran Cao Son, and William Yeoh. Bidding in Periodic Double Auctions Using Heuristics and Dynamic MCTS. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 166–172, 2018. Acceptance Rate:  $710/3470 = 20\%$ .
44. Devon Sigurdson, Vadim Bulitko, William Yeoh, Carlos Hernandez, and Sven Koenig. Real-time Multi-agent Pathfinding. In *Proceedings of the IEEE Conference on Computational Intelligence and Games (CIG)*, pages 1–8, 2018. Acceptance Rate: unknown.
43. Md. Mosaddek Khan, Long Tran-Thanh, William Yeoh, and Nicholas R. Jennings. A Near-Optimal Node-to-Agent Mapping Heuristic for GDL-based DCOP Algorithms in Multi-Agent Systems. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1613–1621, 2018. Acceptance Rate:  $151/597 = 25\%$ .

42. Tiep Le, Atena M. Tabakhi, Long Tran-Thanh, William Yeoh, and Tran Cao Son. Preference Elicitation with Interdependency and User Bother Cost. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1459–1467, 2018. Acceptance Rate:  $151/597 = 25\%$ .
41. Samuel Ang, Hau Chan, Albert Jiang, and William Yeoh. Game-theoretic Goal Recognition Models with Applications to Security Domains. In *Proceedings of the Conference on Decision and Game Theory for Security (GameSec)*, pages 256–272, 2017. Acceptance Rate: unknown.
40. Atena M. Tabakhi, Reza Tourani, Francisco Natividad, William Yeoh, and Satyajayant Misra. Pseudotree Construction Heuristics for DCOPs and Evaluations on the ns-2 Network Simulator. In *Proceedings of the IEEE International Conference on Tools with Artificial Intelligence (ICTAI)*, pages 1105–1112, 2017. Acceptance Rate: unknown.
39. Atena M. Tabakhi, Tiep Le, Ferdinando Fioretto, and William Yeoh. Preference Elicitation for DCOPs. In *Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP)*, pages 278–296, 2017. Acceptance Rate:  $45/104 = 43\%$ .
38. Christabel Wayllace, Ping Hou, and William Yeoh. New Metrics and Algorithms for Stochastic Goal Recognition Design Problems. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 4455–4462, 2017. Acceptance Rate:  $660/2540 = 25\%$ .
37. Van Duc Nguyen, Philipp Obermeier, Tran Cao Son, Torsten Schaub, and William Yeoh. Generalized Target Assignment and Path Finding for Teams of Agents. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 1216–1223, 2017. Acceptance Rate:  $660/2540 = 25\%$ .
36. Khoi D. Hoang, Ping Hou, Ferdinando Fioretto, William Yeoh, Roie Zivan, and Makoto Yokoo. Infinite-Horizon Proactive Dynamic DCOPs. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 212–220, 2017. Acceptance Rate:  $155/595 = 26\%$ .
35. Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. A Multiagent System Approach to Scheduling Devices in Smart Homes. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 981–989, 2017. Acceptance Rate:  $155/595 = 26\%$ .
34. Ferdinando Fioretto, William Yeoh, Enrico Pontelli, Ye Ma, and Satishkumar Ranade. A Distributed Constraint Optimization (DCOP) Approach to the Economic Dispatch with Demand Response. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 999–1007, 2017. Acceptance Rate:  $155/595 = 26\%$ .
33. Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. A Dynamic Programming-based MCMC Framework for Solving DCOPs with GPUs. In *Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP)*, pages 813–831, 2016. Acceptance Rate:  $54/137 = 40\%$ .
32. Christabel Wayllace, Ping Hou, William Yeoh, and Tran Cao Son. Goal Recognition Design with Stochastic Agent Action Outcomes. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 3279–3285, 2016. Acceptance Rate:  $\sim 573/2294 = \sim 25\%$ .
31. Pritee Agrawal, Pradeep Varakantham, and William Yeoh. Scalable Greedy Algorithms for Task/Resource Constrained Multi-Agent Stochastic Planning. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 10–16, 2016. Acceptance Rate:  $\sim 573/2294 = \sim 25\%$ .
30. Khoi D. Hoang, Ferdinando Fioretto, Ping Hou, Makoto Yokoo, William Yeoh, and Roie Zivan. Proactive Dynamic Distributed Constraint Optimization. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 597–605, 2016. Acceptance Rate:  $137/550 = 24\%$ .

29. Tiep Le, Ferdinando Fioretto, William Yeoh, Tran Cao Son, and Enrico Pontelli. ER-DCOPs: A Framework for Distributed Constraint Optimization with Uncertainty in Constraint Utilities. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 606–614, 2016. Acceptance Rate:  $137/550 = 24\%$ .
28. Ping Hou, William Yeoh, and Pradeep Varakantham. Solving Risk-Sensitive POMDPs with and without Cost Observations. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 3138–3144, 2016. Acceptance Rate:  $549/2132 = 26\%$ .
27. Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. Multi-Variable Agent Decomposition for DCOPs. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 2480–2486, 2016. Acceptance Rate:  $549/2132 = 26\%$ .
26. Tran Cao Son, Orkunt Sabuncu, Christian Schulz-Hanke, Torsten Schaub, and William Yeoh. Solving Goal Recognition Design using ASP. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 3181–3187, 2016. Acceptance Rate:  $549/2132 = 26\%$ .
25. William Yeoh, Pradeep Varakantham, Xiaoxun Sun, and Sven Koenig. Incremental DCOP Search Algorithms for Solving Dynamic DCOP Problems. In *Proceedings of the International Conference on Intelligent Agent Technology (IAT)*, pages 257–263, 2015. Acceptance Rate:  $25/96 = 26\%$ .
24. Ferdinando Fioretto, Tiep Le, Enrico Pontelli, William Yeoh, and Tran Cao Son. Exploiting GPUs in Solving (Distributed) Constraint Optimization Problems with Dynamic Programming. In *Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP)*, pages 121–136, 2015. Acceptance Rate:  $39/80 = 49\%$ .
23. Tiep Le, Tran Cao Son, Enrico Pontelli, and William Yeoh. Solving Distributed Constraint Optimization Problems with Logic Programming. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 1174–1181, 2015. Acceptance Rate:  $531/1991 = 27\%$ .
22. Ferdinando Fioretto, Tiep Le, William Yeoh, Enrico Pontelli, and Tran Cao Son. Improving DPOP with Branch Consistency for Solving Distributed Constraint Optimization Problems. In *Proceedings of the International Conference on Principles and Practice of Constraint Programming (CP)*, pages 307–323, 2014. Acceptance Rate: Unknown.
21. Ping Hou, William Yeoh, and Tran Cao Son. Solving Uncertain MDPs by Reusing State Information and Plans. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 2285–2292, 2014. Acceptance Rate:  $398/1406 = 28\%$ .
20. Duc Thien Nguyen, William Yeoh, Hoong Chuin Lau, Shlomo Zilberstein, and Chongjie Zhang. Decentralized Multi-Agent Reinforcement Learning in Average-Reward Dynamic DCOPs. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 1447–1455, 2014. Acceptance Rate:  $398/1406 = 28\%$ .
19. T. K. Satish Kumar, Duc Thien Nguyen, William Yeoh, and Sven Koenig. A Simple Polynomial-Time Randomized Distributed Algorithm for Connected Row Convex Constraints. In *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*, pages 2308–2314, 2014. Acceptance Rate:  $398/1406 = 28\%$ .
18. Ping Hou, William Yeoh, and Pradeep Varakantham. Revisiting Risk-Sensitive MDPs: New Algorithms and Results. In *Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS)*, pages 136–144, 2014. Acceptance Rate: Unknown.
17. Pradeep Varakantham, Na Fu, William Yeoh, Shih-Fen Cheng, and Hoong Chuin Lau. Budgeted Personalized Incentive Approaches for Smoothing Congestion in Resource Networks. In *Proceedings of the International Conference on Algorithmic Decision Theory (ADT)*, pages 375–386, 2013. Acceptance Rate: Unknown.

16. William Yeoh, Akshat Kumar, and Shlomo Zilberstein. Automated Generation of Interaction Graphs for Value-Factored Dec-POMDPs. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 411–417, 2013. Acceptance Rate:  $413/1473 = 28\%$ .
15. Duc Thien Nguyen, William Yeoh, and Hoong Chuin Lau. Distributed Gibbs: A Memory-Bounded Sampling-Based DCOP Algorithm. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 167–174, 2013. Acceptance Rate:  $140/612 = 23\%$ .
14. Geoffrey J. Gordon, Pradeep Varakantham, William Yeoh, Hoong Chuin Lau, Ajay S. Aravamudhan, and Shih-Fen Cheng. Lagrangian Relaxation for Large-Scale Multi-Agent Planning. In *Proceedings of the International Conference on Intelligent Agent Technology (IAT)*, pages 494–501, 2012. Acceptance Rate: Invited.
13. Hoong Chuin Lau, William Yeoh, Pradeep Varakantham, Duc Thien Nguyen, and Huaxing Chen. Dynamic Stochastic Orienteering Problems for Risk-Aware Applications. In *Proceedings of the Conference on Uncertainty in Artificial Intelligence (UAI)*, pages 448–458, 2012. Acceptance Rate:  $96/304 = 32\%$ .
12. Xiaoxun Sun, Tansel Uras, Sven Koenig, and William Yeoh. Incremental ARA\*: An Incremental Anytime Search Algorithm for Moving-Target Search. In *Proceedings of the International Conference on Automated Planning and Scheduling (ICAPS)*, pages 243–251, 2012. Acceptance Rate:  $45/132 = 34\%$ .
11. Duc Thien Nguyen, William Yeoh, and Hoong Chuin Lau. Stochastic Dominance in Stochastic DCOPs for Risk-Sensitive Applications. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 257–264, 2012. Acceptance Rate:  $137/671 = 20\%$ .
10. Patricia Gutierrez, Pedro Meseguer, and William Yeoh. Generalizing ADOPT and BnB-ADOPT. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 554–559, 2011. Acceptance Rate:  $227/1325 = 17\%$ .
9. Xiaoxun Sun, William Yeoh, and Sven Koenig. Generalized Fringe-Retrieving A\*: Faster Moving Target Search on State Lattices. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1081–1087, 2010. Acceptance Rate:  $163/685 = 24\%$ .
8. Xiaoxun Sun, William Yeoh, and Sven Koenig. Moving Target D\* Lite. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 67–74, 2010. Acceptance Rate:  $163/685 = 24\%$ .
7. William Yeoh, Xiaoxun Sun, and Sven Koenig. Trading Off Solution Quality for Faster Computation in DCOP Search Algorithms. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 354–360, 2009. Acceptance Rate:  $331/1290 = 26\%$ .
6. Xiaoxun Sun, William Yeoh, and Sven Koenig. Efficient Incremental Search for Moving Target Search. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 615–620, 2009. Acceptance Rate:  $331/1290 = 26\%$ .
5. William Yeoh, Pradeep Varakantham, and Sven Koenig. Caching Schemes for DCOP Search Algorithms. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 609–616, 2009. Acceptance Rate:  $132/591 = 22\%$ .  
\*Nominated for the Pragnesh Jay Modi Best Student Paper Award.
4. Xiaoxun Sun, William Yeoh, and Sven Koenig. Dynamic Fringe-Saving A\*. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 891–898, 2009. Acceptance Rate:  $132/591 = 22\%$ .
3. Xiaoxun Sun, William Yeoh, Po-An Chen, and Sven Koenig. Simple Optimization Techniques for A\*-Based Search. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 931–936, 2009. Acceptance Rate:  $132/591 = 22\%$ .

2. William Yeoh, Ariel Felner, and Sven Koenig. BnB-ADOPT: An Asynchronous Branch-and-Bound DCOP Algorithm. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 591–598, 2008. Acceptance Rate:  $142/640 = 22\%$ .
1. Xiaoxun Sun, Sven Koenig, and William Yeoh. Generalized Adaptive A\*. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 469–476, 2008. Acceptance Rate:  $142/640 = 22\%$ .

## Book Chapters

4. William Kluegel, Muhammad Aamir Iqbal, Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. A Realistic Dataset for the Smart Home Device Scheduling Problem for DCOPs. In *AAMAS 2017 Workshops (Visionary Papers)*, Gita Sukthankar and Juan Antonio Rodriguez-Aguilar (editors), Volume 10643 of *Lecture Notes in Artificial Intelligence*, pages 125–142, Springer, 2017.
3. Moinul Morshed Porag Chowdhury, Russell Y. Folk, Ferdinando Fioretto, Christopher Kiekintveld, and William Yeoh. Investigation of Learning Strategies for the SPOT Broker in Power TAC. In *Agent-Mediated Electronic Commerce: Designing Trading Strategies and Mechanisms for Electronic Markets*, Sofia Ceppi, Esther David, Chen Hajaj, Valentin Robu, and Ioannis A. Vetsikas (editors), Volume 271 of *Lecture Notes in Business Information Processing*, pages 96–111, Springer, 2017.
2. Francisco Natividad, Russell Y. Folk, William Yeoh, and Huiping Cao. On the Use of Off-the-Shelf Machine Learning Techniques to Predict Energy Demands of Power TAC Consumers. In *Agent-Mediated Electronic Commerce: Designing Trading Strategies and Mechanisms for Electronic Markets*, Sofia Ceppi, Esther David, Chen Hajaj, Valentin Robu, and Ioannis A. Vetsikas (editors), Volume 271 of *Lecture Notes in Business Information Processing*, pages 112–126, Springer, 2017.
1. William Yeoh, Ariel Felner, and Sven Koenig. IDB-ADOPT: A Depth-First Search DCOP Algorithm. In *Recent Advances in Constraints*, Angelo Oddi, François Fages and Francesca Rossi (editors), Volume 5655 of *Lecture Notes in Artificial Intelligence*, pages 132–146. Springer, 2009.

## Conference Papers (Short Papers, Ext. Abstracts, Technical Communications)

13. Carlos Hernández Ulloa, Jorge Baier, William Yeoh, Vadim Bulitko, and Sven Koenig. A Learning-Based Framework for Memory-Bounded Heuristic Search: First Results. In *Proceedings of the International Symposium on Combinatorial Search (SoCS)*, 2019. Acceptance Rate:  $19$  (full) +  $9$  (ext. abstract) /  $45 = 55\%$ .
12. William Yeoh. Towards Improving the Expressivity and Scalability of Distributed Constraint Optimization Problems. In *Proceedings of the International Joint Conference on Artificial Intelligence (IJCAI)*, pages 5734–5738, 2018. Acceptance Rate: Invited.  
\*Paper accompanying early career spotlight presentation.
11. Moinul Morshed Porag Chowdhury, Christopher Kiekintveld, Tran Cao Son, and William Yeoh. Bidding Strategy for Periodic Double Auctions Using Monte Carlo Tree Search. In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1897–1899, 2018. Acceptance Rate:  $151$  (full) +  $132$  (ext. abstract) /  $597 = 47\%$ .
10. Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. Multi-Variable Agent Decomposition for DCOPs to Exploit Multi-Level Parallelism (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1823–1824, 2015. Acceptance Rate:  $167$  (full) +  $147$  (ext. abstract) /  $670 = 47\%$ .
9. Ferdinando Fioretto, Federico Campeotto, Agostina Dovier, Enrico Pontelli, and William Yeoh. Large Neighborhood Search with Quality Guarantees for Distributed Constraint Optimization Problems (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1835–1836, 2015. Acceptance Rate:  $167$  (full) +  $147$  (ext. abstract) /  $670 = 47\%$ .

8. Tiep Le, Tran Cao Son, Enrico Pontelli, and William Yeoh. Logic and Constraint Logic Programming for Distributed Constraint Optimization (Technical Communication). In *Proceedings of the International Conference on Logic Programming (ICLP)*, to appear, 2014. Acceptance Rate: Unknown.
7. Tiep Le, Tran Cao Son, Enrico Pontelli, and William Yeoh. ASP-DPOP: Solving Distributed Constraint Optimization Problems with Logic Programming (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1337–1338, 2014. Acceptance Rate:  $169$  (full) +  $159$  (ext. abstract) /  $709 = 46\%$ .
6. Duc Thien Nguyen, William Yeoh, Hoong Chuin Lau, Shlomo Zilberstein, and Chongjie Zhang. Decentralized Multi-Agent Reinforcement Learning in Average-Reward Dynamic DCOPs (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1341–1342, 2014. Acceptance Rate:  $169$  (full) +  $159$  (ext. abstract) /  $709 = 46\%$ .
5. Ferdinando Fioretto, Federico Campeotto, Luca Da Rin Fioretto, William Yeoh, and Enrico Pontelli. GD-Gibbs: A GPU-based Sampling Algorithm for Solving Distributed Constraint Optimization Problems (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1339–1340, 2014. Acceptance Rate:  $169$  (full) +  $159$  (ext. abstract) /  $709 = 46\%$ .
4. Geoffrey J. Gordon, Pradeep Varakantham, William Yeoh, Hoong Chuin Lau, Ajay S. Aravamudan, and Shih-Fen Cheng. Lagrangian Relaxation for Large-Scale Multi-Agent Planning (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1227–1228, 2012. Acceptance Rate:  $137$  (full) +  $154$  (ext. abstract) /  $671 = 43\%$ .
3. Pradeep Varakantham, William Yeoh, Prasanna Velagapudi, Katia Sycara, and Paul Scerri. Prioritized Shaping of Models for Solving DEC-POMDPs (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1269–1270, 2012. Acceptance Rate:  $137$  (full) +  $154$  (ext. abstract) /  $671 = 43\%$ .
2. William Yeoh, Pradeep Varakantham, Xiaoxun Sun, and Sven Koenig. Incremental DCOP Search Algorithms for Solving Dynamic DCOPs (Extended Abstract). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1069–1070, 2011. Acceptance Rate:  $127$  (full) +  $131$  (ext. abstract) /  $575 = 45\%$ .
1. William Yeoh, Sven Koenig, and Xiaoxun Sun. Trading Off Solution Cost for Smaller Runtime in DCOP Search Algorithms (Short Paper). In *Proceedings of the International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, pages 1445–1448, 2008. Acceptance Rate:  $142$  (full) +  $119$  (short) /  $640 = 41\%$ .

## Symposium and Workshop Papers

29. Stylianos Vasileiou, William Yeoh, and Tran Cao Son. A Preliminary Logic-based Approach for Explanation Generation. In *Proceedings of the Workshop on Explainable Planning (XAIP)*, 2019.
28. Khoi Hoang, Christabel Wayllace, William Yeoh, Jacob Beal, Soura Dasgupta, Yuanqiu Mo, Aaron Paulos, and Jon Schewe. New Distributed Constraint Satisfaction Algorithms for Load Balancing in Edge Computing: A Feasibility Study. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2019.
27. Khoi Hoang, Ferdinando Fioretto, William Yeoh, Enrico Pontelli, and Roie Zivan. An Iterative Local Search Scheme with Quality Guarantees for Multi-Agent Optimization. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2019.
26. Christabel Wayllace, Sarah Keren, William Yeoh, Avigdor Gal, and Erez Karpas. Accounting for Partial Observability in Stochastic Goal Recognition Design: Messing with the Marauder’s Map. In



- Proceedings of the Workshop on Heuristics and Search for Domain-Independent Planning (HSDIP)*, 2018.
25. Yunxiu Zeng, Kai Xu, Quanjun Yin, Long Qin, Yabing Zha, and William Yeoh. Inverse Reinforcement Learning based Human Behavior Modeling for Goal Recognition in Dynamic Local Network Interdiction. In *Proceedings of the Workshop on Plan, Activity, and Intent Recognition (PAIR)*, 2018.
  24. William Kluegel, Muhammad Aamir Iqbal, Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. A Realistic Dataset for the Smart Home Device Scheduling Problem for DCOPs. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2017.
  23. Yarden Naveh, Roie Zivan, and William Yeoh. Resilient Distributed Constraint Optimization Problems. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2017.
  22. Ferdinando Fioretto, William Yeoh, and Enrico Pontelli. A Multiagent System Approach to Scheduling Devices in Smart Homes. In *Proceedings of the International Workshop on Artificial Intelligence for Smart Grids and Smart Buildings (AISGSB)*, 2017.
  21. Moinul Morshed Porag Chowdhury, Russell Y. Folk, Ferdinando Fioretto, Christopher Kiekintveld, and William Yeoh. Investigation of Learning Strategies for the SPOT Broker in Power TAC. In *Proceedings of the International Workshop on Agent-Mediated Electronic Commerce and Trading Agents Design and Analysis (AMEC/TADA)*, 2016.
  20. Francisco Natividad, Russell Y. Folk, William Yeoh, and Huiping Cao. On the Use of Off-the-Shelf Machine Learning Techniques to Predict Energy Demands of Power TAC Consumers. In *Proceedings of the International Workshop on Agent-Mediated Electronic Commerce and Trading Agents Design and Analysis (AMEC/TADA)*, 2016.
  19. Atena M. Tabakhi, Ferdinando Fioretto, and William Yeoh. A Preliminary Study on Preference Elicitation in DCOPs for Scheduling Devices in Smart Buildings. In *Proceedings of the International Workshop on Advances in Preference Handling (MPREF)*, 2016.
  18. Tiep Le, Tran Cao Son, Enrico Pontelli, and William Yeoh. Solving Distributed Constraint Optimization Problems Using Logic Programming. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2016.
  17. Khoi Hoang, Ferdinando Fioretto, Ping Hou, Makoto Yokoo, William Yeoh, and Roie Zivan. Proactive Dynamic DCOPs. In *Proceedings of the International Workshop on Artificial Intelligence for Smart Grids and Smart Buildings (AISGSB)*, 2016.
  16. Ferdinando Fioretto, Tiep Le, William Yeoh, Enrico Pontelli, and Tran Cao Son. Improving DPOP with Branch Consistency for Solving Distributed Constraint Optimization Problems. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2015.
  15. Ferdinando Fioretto, Federico Campeotto, Agostino Dovier, Enrico Pontelli and William Yeoh. Large Neighborhood Search with Quality Guarantees for Distributed Constraint Optimization Problems. In *Proceedings of the International Workshop on Optimization in Multi-Agent Systems (OptMAS)*, 2015.
  14. T. K. Satish Kumar, Duc Thien Nguyen, William Yeoh, and Sven Koenig. A Simple Polynomial-Time Randomized Distributed Algorithm for Connected Row Convex Constraints. In *Proceedings of the International Joint Workshop on Optimization in Multi-Agent Systems and Distributed Constraint Reasoning (OptMAS-DCR)*, 2014.
  13. Duc Thien Nguyen, William Yeoh, Hoong Chuin Lau, Shlomo Zilberstein, and Chongjie Zhang. Decentralized Multi-Agent Reinforcement Learning in Average-Reward Dynamic DCOPs. In *Proceedings of the International Joint Workshop on Optimization in Multi-Agent Systems and Distributed Constraint Reasoning (OptMAS-DCR)*, 2014.

12. Saurabh Gupta, William Yeoh, Enrico Pontelli, Palak Jain, Satish Ranade. Modeling Microgrid Islanding Problems as DCOPs. In *Proceedings of the North American Power Symposium (NAPS)*, 2013.
11. Duc Thien Nguyen, William Yeoh, and Hoong Chuin Lau. Distributed Gibbs: A Memory-Bounded Sampling-Based DCOP Algorithm. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, pages 30–44, 2013.
10. Saurabh Gupta, Palak Jain, William Yeoh, Satish Ranade, and Enrico Pontelli. Solving Customer-Driven Microgrid Optimization Problems as DCOPs. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, pages 45–59, 2013.
9. William Yeoh, Akshat Kumar, and Shlomo Zilberstein. Automated Generation of Interaction Graphs for Value-Factored Decentralized POMDPs. In *Proceedings of the International Workshop on Multiagent Sequential Decision Making under Uncertainty (MSDM)*, pages 40–46, 2013.
8. Akshat Kumar, William Yeoh, and Shlomo Zilberstein. On Message-Passing, MAP Estimation in Graphical Models and DCOPs. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, pages 57–70, 2011.
7. Todd Neller, John DeNero, Dan Klein, Sven Koenig, William Yeoh, Xiaoming Zheng, Kenny Daniel, Alex Nash, Zachary Dodds, Giuseppe Carenini, David Poole, and Chris Brooks. Model AI Assignments. In *Proceedings of the Symposium on Educational Advances in Artificial Intelligence (EAAI)*, 2010.
6. William Yeoh, Roie Zivan, and Sven Koenig. Discrepancy-Based Approach for Solving Distributed Constraint Optimization Problems. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, pages 132–144, 2009.
5. William Yeoh, Xiaoxun Sun, and Sven Koenig. Trading Off Solution Quality for Faster Computation in DCOP Search Algorithms. In *Proceedings of the International Symposium on Combinatorial Search (SoCS)*, 2009.
4. Xiaoxun Sun, William Yeoh, and Sven Koenig. Dynamic Fringe-Saving A\*. In *Proceedings of the International Symposium on Combinatorial Search (SoCS)*, 2009.
3. William Yeoh, Sven Koenig, and Xiaoxun Sun. Trading Off Solution Cost for Smaller Runtime in DCOP Search Algorithms [Extended Version]. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, pages 25–35, 2008.
2. William Yeoh, Ariel Felner, and Sven Koenig. BnB-ADOPT: An Asynchronous Branch-and-Bound DCOP Algorithm. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, 2007.
1. William Yeoh, Sven Koenig, and Ariel Felner. IDB-ADOPT: A Depth-First Search DCOP Algorithm. In *Proceedings of the International Workshop on Distributed Constraint Reasoning (DCR)*, pages 56–70, 2007.

## Conference Reports

1. Robert Morris, Blai Bonet, Marc Cavazza, Marie desJardins, Ariel Felner, Nick Hawes, Brad Knox, Sven Koenig, George Konidaris, Jérôme Lang, Carlos Linares López, Daniele Magazzeni, Amy McGovern, Sriraam Natarajan, Nathan R. Sturtevant, Michael Thielscher, William Yeoh, Sebastian Sardiña, Kiri Wagstaff. A Summary of the Twenty-Ninth AAAI Conference on Artificial Intelligence. *AI Magazine*, 36(3), pages 99–106, 2015.

## Technical Reports

1. Sven Koenig and William Yeoh. A Project on Fast Trajectory Replanning for Computer Games for “Introduction to Artificial Intelligence” Classes. Technical Report, Department of Computer Science, University of Southern California, 2008.

## Advising

### PH.D. STUDENTS

- Stylianos Vasileiou Spring 2019 – Current
  - Gan Xu Spring 2019 – Current
  - Christabel Wayllace Spring 2016 – Current
  - Atena M. Tabakhi Fall 2014 – Current
  - Khoi D. Hoang Spring 2014 – Current
  - Ping Hou Spring 2013 – Spring 2017
- Thesis title: *Probabilistic Planning with Risk-Sensitive Criterion.*  
 First job: *Software Engineer at Uber Advanced Technologies Group.*

### M.S. STUDENTS

- Xipeng Wang Summer 2018 – Spring 2019  
Project title: *Smart Home Audio Assistant.*
- Peter Kim Spring 2018 – Summer 2018  
Project title: *Optimal Scheduling of Smart Home Devices Using Integer Linear Programming with a Visual Interface.*
- Russell Folk Spring 2015 – Spring 2017  
Project title: *Using Reinforcement Learning to Generate Tariffs for Profitable Consumption in Power TAC.*
- Mounika Challa Fall 2016 – Spring 2017  
Project title: *NMSU CS Graduate Course Planner.*
- Francisco Natividad Fall 2015 – Summer 2016  
Project title: *On the Use of Off-the-Shelf Machine Learning Techniques to Predict Energy Demands of Power TAC Consumers.*
- Christabel Wayllace Fall 2014 – Fall 2015  
Thesis title: *Goal Recognition Design with Stochastic Agent Action Outcomes.*
- Amirsaber Sharifi Fall 2013 – Fall 2014  
Project title: *DeepDepth: A Framework to Visualize Social Network Data.*
- Atena M. Tabakhi Spring 2013 – Summer 2014  
Thesis title: *Pseudo-tree Generation for Weighted and Unweighted Distributed Constraint Optimization Problems.*

## Teaching

### WASHINGTON UNIVERSITY IN ST. LOUIS

- CSE 311A: Introduction to Intelligent Agents Using Science Fiction Fall 2018
- CSE 511A: Introduction to Artificial Intelligence Spring 2018, Spring 2019, Fall 2019

### NEW MEXICO STATE UNIVERSITY

- CS 475/505: Artificial Intelligence I Spring 2014, Spring 2015
- CS 479: Introduction to Intelligent Agents Using Science Fiction Fall 2014, Fall 2015
- CS 479/579: Distributed Constraint Reasoning Fall 2013
- CS 479/579: Heuristic Search and Its Applications Spring 2013
- CS 479/579: Introduction to Smart Grids Fall 2016
- CS 483/503: Introduction to Robotics Spring 2014, Spring 2015, Fall 2016
- CS 575: Artificial Intelligence II Fall 2012, Fall 2014
- CS 579: Advanced Topics in Agents Research Spring 2016

## Service

### BOARD OF DIRECTORS

- International Foundation for Autonomous Agents and Multiagent Systems 2018 – 2024

### EDITORIAL BOARD

- Journal of Artificial Intelligence Research 2014 – 2016

### CONFERENCE ORGANIZING COMMITTEE

- AAAI Conference on Artificial Intelligence (AAAI)
  - *Student Activities Co-Chair* 2015, 2016, 2019, 2020
  - *Job Market Co-Chair* 2017
  - *Tutorial Co-Chair* 2018, 2019
- Conference on Principles and Practice of Multi-Agent Systems (PRIMA)
  - *Tutorial Co-Chair* 2016
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS)
  - *Scholarship Co-Chair* 2018
  - *Doctoral Consortium Co-Chair* 2019
  - *Publications Chair* 2020
- International Conference on Automated Planning and Scheduling (ICAPS)
  - *Sponsorship Co-Chair* 2018
- International Conference on Principles and Practice of Constraint Programming (CP)
  - *Multiagent and Parallel CP Track Co-Chair* 2018, 2019
- International Joint Conference on Artificial Intelligence (IJCAI)
  - *Doctoral Consortium Co-Chair* 2020
- International Symposium on Combinatorial Search (SoCS)
  - *Conference Co-Chair* 2019

### SENIOR PROGRAM COMMITTEE

- AAAI Conference on Artificial Intelligence (AAAI) 2019 – 2020
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2017, 2019
- International Conference on Principles and Practice of Constraint Programming (CP) 2019
- International Joint Conference on Artificial Intelligence (IJCAI) 2013, 2015, 2017 – 2018

### PROGRAM COMMITTEE

- AAAI Conference on Artificial Intelligence (AAAI) 2011 – 2018
- AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE) 2014 – 2016
- Conference on Principles and Practice of Multi-Agent Systems (PRIMA) 2016 – 2019
- European Conference on Artificial Intelligence (ECAI) 2016
- International Conference on Agents (ICA) 2016 – 2017
- International Conference on Automated Planning and Scheduling (ICAPS) 2013 – 2019
- International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2011 – 2016
- International Conference on Intelligent Agent Technology (IAT) 2015
- International Conference on Principles and Practice of Constraint Programming (CP) 2012, 2017 – 2018
- International Joint Conference on Artificial Intelligence (IJCAI) 2011, 2016, 2019
- International Symposium on Combinatorial Search (SoCS) 2012 – 2018
- International Workshop on Massive Multi-Agent Systems (MassiveMAS) 2015
- International Workshop on Distributed Constraint Reasoning (DCR) 2010 – 2011
- International Workshop on Optimization in Multi-Agent Systems (OptMAS) 2011 – 2013, 2018 – 2019
- International Workshop on Artificial Intelligence in Smart Grids and Smart Buildings (AISGSB) 2016 – 2017

- Symposium on Educational Advances in Artificial Intelligence (EAAI) 2016 – 2019
- Workshop on Interactions with Mixed Agent Types (Agent-Mix) 2016
- Workshop on Plan, Activity, and Intent Recognition (PAIR) 2019 – 2020

## SYMPOSIUM/WORKSHOP PROGRAM CO-CHAIR

- AAAI Fall Symposium on Multi-Agent Coordination under Uncertainty 2011
- International Joint Workshop on Optimization in Multi-Agent Systems and Distributed Constraint Reasoning (OptMAS-DCR) 2014
- International Symposium on Combinatorial Search (SoCS) 2019
- International Workshop on Distributed Constraint Reasoning (DCR) 2009, 2013
- International Workshop on Optimization in Multi-Agent Systems (OptMAS) 2015 – 2017

## JOURNAL REVIEWER

- ACM Transactions on Intelligent Systems and Technology 2016 – 2018
- AI Communications 2012
- Annals of Mathematics and Artificial Intelligence 2014
- Artificial Intelligence 2009, 2011 – 2013, 2015 – 2017, 2019
- Artificial Intelligence Review 2016
- Autonomous Agents and Multi-Agent Systems 2010 – 2016, 2018 – 2019
- Computer Communications 2012
- Constraints 2010, 2012, 2014, 2018
- Entropy 2013
- IEEE Transactions on Cybernetics 2016
- Journal of Artificial Intelligence Research 2011 – 2019
- Web Intelligence and Agent Systems: An International Journal 2009

## CONFERENCE/SYMPOSIUM/WORKSHOP EXTERNAL REVIEWER

- AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE) 2010
- Robotics: Science and Systems (RSS) 2005
- International Conference on Automated Planning and Scheduling (ICAPS) 2010
- International Conference on Intelligent Robots and Systems (IROS) 2013, 2015
- International Conference on Principles and Practice of Constraint Programming (CP) 2009
- International Conference on Principles and Practice of Multi-Agent Systems (PRIMA) 2010
- International Conference on Robotics and Automation (ICRA) 2004
- International Conference on Social Informatics (SocInfo) 2011
- International Symposium on Combinatorial Search (SoCS) 2011
- International Workshop on Constraint Solving and Constraint Logic Programming (CSCLP) 2008
- International Workshop on Distributed Constraint Reasoning (DCR) 2007

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