

# George Konidakis

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## Academic Employment

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- **Assistant Professor** Sept 2016–present.  
Brown University, Department of Computer Science.
- **Assistant Professor** Sep. 2014–Sept 2016.  
Duke University, Departments of Computer Science & Electrical and Computer Engineering.
- **Postdoctoral Associate** Jan. 2011–Aug. 2014.  
MIT Computer Science and Artificial Intelligence Laboratory.  
Research on hierarchical robot learning and planning with Professors Leslie Kaelbling and Tomas Lozano-Perez.

## Education

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- **Doctor of Philosophy**, Computer Science. Sep. 2004–Dec. 2010.  
Computer Science Department, University of Massachusetts Amherst.  
Dissertation: *Autonomous Robot Skill Acquisition*, advisor: Prof. Andrew G. Barto.
- **Master of Science**, Artificial Intelligence (with distinction). Sep. 2002–Sep. 2003.  
School of Informatics, University of Edinburgh.  
Dissertation: *Behaviour-Based Reinforcement Learning*, supervisor: Dr. Gillian Hayes.
- **Bachelor of Science with Honours**, Computer Science (with distinction). Jan. 2001–Dec. 2001.  
School of Computer Science, University of the Witwatersrand.  
Research Report: *Axial Line Placement in Deformed Urban Grids*, supervisor: Prof. Ian Sanders.
- **Bachelor of Science**. Jan. 1998–Dec. 2000.  
Computer Science and Computational & Applied Mathematics (with distinction).  
University of the Witwatersrand.

## Teaching Experience

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- **Duke University**
  - Hierarchical Reinforcement Learning and Planning (CPS 590.2) Fall 2014.
  - Introduction to Artificial Intelligence (CPS 270) Spring 2015, 2016.
  - Decision Making for Robotics and Autonomous Systems (CPS 590.1) Fall 2015.
- **Guest Lectures**
  - *Reinforcement Learning* Dec. 1st 2011,  
Nov. 27th 2012.  
Massachusetts Institute of Technology, course 6.867 (Machine Learning).
  - *Hierarchical Reinforcement Learning* Nov. 5th 2012.  
Brown University, course CSCI2951-F (Learning and Sequential Decision Making).
  - *Reinforcement Learning for Robotics* May 7th 2013.  
Massachusetts Institute of Technology, course 6.S064 (Introduction to Machine Learning).

- **External Author and Examiner** Jun. 2008–Jul. 2014  
 University of London, International Programmes. Developed subject guide and accompanying CD for undergraduate Artificial Intelligence (2910310/CO3310) course, and set and marked projects and final exams. This course is taken by approximately 40 correspondence students every year from around the world, who obtain credit toward a University of London degree.
- **Curriculum Design** Jun. 2011–August 2011  
 MIT-Singapore Alliance. Collaborated with the MIT Mechanical Engineering department to design an introductory course (and associated course notes) on numerical programming in Python. A Matlab version is now being used to teach Numerical Computation for Mechanical Engineers (2.086) at MIT.
- **Teaching Assistant** (7 semesters) Sep. 2004–Dec. 2010  
 Department of Computer Science, University of Massachusetts Amherst. Graded written and programming assignments, conducted discussion sections and held office consultations for courses ranging from introductory Java programming to graduate-level algorithms.
- **Teaching Assistant** Jan.–Jul. 2002  
 School of Computer Science, University of the Witwatersrand, Johannesburg. Co-lectured Basic Computer Organisation (first semester, first year of Computer Science) to approximately 180 students, and tutored Fundamental Algorithmic Concepts (second semester, first year) to a class of approximately 120 students.
- **Tutor** Jan.–Nov. 2001  
 School of Computer Science, University of the Witwatersrand, Johannesburg. Tutored and marked tests and assignments for first-year undergraduate courses.

## Invited Talks at Conferences and Workshops

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- *Combining State and Temporal Abstraction*. ICML 2016 Workshop on Abstraction in RL, New York City, June 23rd 2016.
- *What are Representations for?* RSS 2016 Workshop on Geometry and Beyond—Representations, Physics, and Scene Understanding for Robotics, Ann Arbor, Michigan, June 19th 2016.
- *Avoiding Learning by Exploiting Structure*. ICRA 2016 Workshop on Nature Versus Nurture in Robotics, May 20th 2016.
- *Robots, Skills, and Symbols*. ICRA 2016 Workshop on Task-driven Perceptual Representations: Sensing, Planning and Control under Resource Constraints, Stockholm, May 16th 2016.
- *Learning Symbolic Representations for Planning*. RSS 2015 Workshop on Learning Reusable Concepts in Robotics, Rome, July 16th 2015.
- *Robots, Skills, and Symbols*. NIPS 2014 Workshop on Autonomously Learning Robots, Montreal, December 12th 2014.
- *Robots, Skills, and Symbols*. IJCAI 2013 Workshop on Machine Learning for Interactive Systems: Bridging the Gap between Perception, Action and Communication, Beijing, August 4th 2013.
- *Robot Skill Acquisition*. Third EUCogIII (European Network for the Advancement of Artificial Cognitive Systems, Interaction and Robotics) Members Conference, Palma de Mallorca, April 10th 2013.
- *Robots, Skills, and Symbols*. Schloss Dagstuhl Seminar on Mechanisms of Ongoing Development in Cognitive Robotics, February 13th 2013.

## Seminars and Colloquia

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- MIT. *Robot Motion Planning on a Chip*, Robotics Seminar, November 1st 2016.
- University of Pennsylvania. *Robots, Skills, and Symbols*, April 15th 2016.
- Indiana University. *Robots, Skills, and Symbols*, December 4th 2015.
- MIT. *Robots, Skills, and Symbols*, October 24th 2014.
- Brown University. *Robots, Skills, and Symbols*, October 23rd 2014.
- Texas A&M. *Robots, Skills, and Symbols*, October 6th 2014.
- University of Texas at Austin. *Robots, Skills, and Symbols*, October 3rd 2014.
- University of Michigan. *Robots, Skills, and Symbols*, September 19th 2014.
- Oregon State University. *Robots, Skills, and Symbols*, August 27th 2014.
- Harvard University. *Autonomous Robot Skill Acquisition*, Machine Learning Tea, September 19th 2012.
- University College London, Gatsby Computational Neuroscience Unit. *Autonomous Robot Skill Acquisition*, seminar, December 9th 2011.
- Rutgers. *Autonomous Robot Skill Acquisition*, DCS Colloquium, December 7th 2011.
- MIT. *Skill Acquisition in Continuous Reinforcement Learning Domains*, July 27th 2010.
- Brown University. *Skill Acquisition in Continuous Reinforcement Learning Domains*, July 26th 2010.
- Williams College. *Toward Autonomous Robot Skill Acquisition*, CS Colloquium, November 21st 2008.
- Rutgers. *Toward Autonomous Robot Skill Acquisition*, DCS Colloquium, September 22nd 2008.
- University of Massachusetts Amherst. *Agent Space vs. Problem Space: Knowledge and Skill Transfer in Reinforcement Learning*, Machine Learning and Friends Lunch, December 1st 2005; *Sensorimotor Abstraction Selection for Autonomous Robot Skill Acquisition*. Machine Learning and Friends Lunch, 30th April 2008.
- University of Edinburgh. *Behavior-Based Reinforcement Learning*, December 4th 2003.
- University of the Witwatersrand. *Behavior-Based Reinforcement Learning*, 5th October 2003.
- University of Bath. *Behavior-Based Reinforcement Learning*, BAI Summer Seminar Series, September 23rd 2003.

## Academic Service and Memberships

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- Action Editor, Journal of Machine Learning Research, November 2015—present.
- Robotics Chair (with Prof. Gregory Dudek, Dr. Brad Knox, and Dr. Nick Hawes), AAAI 2014–2016.
- Co-organizer, co-founder (with Stefanie Tellex, Matt Walter and Brian Scassellati), and steering committee, *Northeast Robotics Colloquium* (NERC), 2012—present.
- Co-organizer (with Lorenzo Riano, Alessandro Saffioti, Nick Hawes, Siddharth Srivastava, and Moritz Tenorth), *IROS 2014 Workshop on AI and Robotics*, September 14th 2014.
- Co-organizer (with Alessandro Saffioti, Nick Hawes, and Moritz Tenorth), *AAAI 2014 Workshop on AI and Robotics*, July 27–28th 2014.
- Co-organizer (with Byron Boots, Nick Hawes, Todd Hester, Tekin Meriçli, Lorenzo Riano, Benjamin Rosman and Peter Stone), *AAAI 2013 Workshop on Intelligent Robotic Systems*, July 14–15th 2013.

- Co-organizer (with Gerhard Neumann, Freek Stulp, and Jan Peters), *RSS Workshop on Hierarchical and Structured Learning for Robotics*, June 28th, 2013.
- Co-organizer (with Byron Boots, Nick Hawes, Todd Hester, Bhaskara Marthi, Lorenzo Riano and Benjamin Rosman), *Designing Intelligent Robots: Reintegrating AI II*, AAAI 2013 Spring Symposium.
- Co-organizer (with Byron Boots, Stephen Hart, Todd Hester, Sarah Osentoski and David Wingate), *Designing Intelligent Robots: Reintegrating AI*, AAAI 2012 Spring Symposium.
- Co-organizer (with Özgür Şimşek), *Abstraction in Reinforcement Learning ICML/UAI/COLT 2009 Workshop*.
- Journal Reviewing:
  - Journal of Machine Learning Research (2006, 2007, 2008, 2010, 2012, 2013, 2015).
  - Journal of Artificial Intelligence Research (2006, 2007, 2011, 2012, 2013, 2014, 2015).
  - International Journal of Robotics Research (2013, 2016).
  - Autonomous Robots (2015).
  - Artificial Intelligence (2012, 2013, 2014, 2015).
  - IEEE Transactions on Robotics (2005, 2013, 2014, 2015).
  - Machine Learning (2009, 2011).
  - Robotics and Autonomous Systems (2010, 2011).
  - IEEE Transactions on Autonomous Mental Development (2010).
  - Computational Intelligence (2011, 2012, 2013).
  - IEEE Transactions on Neural Networks (2009, 2010).
  - South African Computer Journal (2011, 2012).
- Conference Reviewing:
  - Neural Information Processing Systems (2011, 2012, 2013, 2014, 2015).
  - International Conference on Machine Learning (2009, 2012, 2013, 2014, 2015).
  - Robotics: Science and Systems (2013, 2014, 2015).
  - International Joint Conference on Artificial Intelligence (2009, 2011, 2013, 2015, 2016).
  - AAAI Conference on Artificial Intelligence (2010, 2013, 2016).
  - IEEE International Conference on Robotics and Automation (2010, 2011, 2012, 2013, 2015, 2016).
  - IEEE/RSJ International Conference on Intelligent Robots and Systems (2012, 2013, 2014, 2015, 2016).
  - International Conference on Automated Planning and Scheduling (2015).
  - ACM/IEEE International Conference on Human-Robot Interaction (2010).
  - IEEE Conference on Development and Learning (2010, 2011, 2012).
  - North East Student Colloquium on Artificial Intelligence (2006, 2007, 2008).
  - SAICSIT Annual Research Conference (2009, 2010, 2011, 2012, 2013).
- Senior Program Committee Member:
  - International Joint Conference on Artificial Intelligence (2013, 2015).
- Membership of Professional Societies:
  - Association for the Advancement of Artificial Intelligence (since 2006).
  - International Society for Adaptive Behavior (2004–2007).
  - South African Institute for Computer Scientists and Information Technologists (since 2001).
- Departmental Service: Graduate Student Representative (September 2007–December 2008).
- Maintainer (with Chris Vigorito), Reinforcement Learning Repository (2005–2010).

## Grants and Funding

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- *Constructing Abstract Hierarchies for Robust, Real-Time Control*. AFOSR Young Investigator Program. Grant number FA9550-17-1-0124, award amount: \$356,861.
- *Bridging the Gap Between Low-Level Robot Control and Flexible High-Level Task Planning*. DARPA Young Faculty Award. Grant number D15AP00104, award amount: \$492,826.
- *Low-Power, Real-Time Motion Planning for Complex Robots in Unstructured Environments*. Robotics Fast Track Grant (with Co-PI Professor Daniel Sorin), award amount: \$99,242.28.
- *CRCNS: Representational Foundations of Adaptive Behavior in Natural and Artificial Agents*. National Institutes of Health (with PI Professor Matthew Botvinick and Co-PI Professor Samuel Gershman). Grant number 1R01MH109177-01, award amount: \$1,183,417.
- *Robotics Activities at Association for the Advancement of Artificial Intelligence (AAAI) 2016*. National Science Foundation. Award number 1600043, award amount: \$17,500.00.

## Honors and Awards

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- AFOSR Young Investigator Program Award (class of 2017).
- DARPA Young Faculty Award (class of 2015).
- Best Paper nomination at Robotics: Science and Systems, for *Policy Search for Multi-Robot Coordination under Uncertainty*. Christopher Amato, George Konidaris, Ariel Anders, Gabriel Cruz, Jonathan P. How and Leslie P. Kaelbling. July 2015.
- MIT Intelligence Initiative (I<sup>2</sup>) Postdoctoral Fellowship, April 2013.
- Best Student Video, AAAI 2011 Video Competition, for *Autonomous Robot Skill Acquisition*, Scott Kuindersma and George Konidaris. August 2011.
- The Rank Xerox Prize for the best Artificial Intelligence MSc dissertation, University of Edinburgh, 2003.
- Commonwealth Scholarship (ref. ZACS-2002-344), Association of Commonwealth Universities, for study at the University of Edinburgh, 2002–2003.
- The Liberty Life Gold Medal for outstanding performance in Computer Science Honours, University of the Witwatersrand, 2001.
- The Altech Systems Prize for the best Computer Science Honours Research Report, University of the Witwatersrand, 2001.
- The Colin James Young Award for the best project in any area of the Mathematical Sciences, University of the Witwatersrand, 2001.
- The Computer Science Alumni Medal for the Best Student Tutor, University of the Witwatersrand, 2001.
- Wits Interactive Computing Group (ICG): President (2001), Head of Programming (1999 and 2000), Programming Champion (2000 and 2001).

## Publications

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### Journal Articles

1. C. Amato, G.D. Konidaris, A. Anders, G. Cruz, J. How, and L.P. Kaelbling. Policy Search for Multi-Robot Coordination under Uncertainty. *The International Journal of Robotics Research* 35(14), pages 1760–1778, December 2016.
2. D. Wookey and G.D. Konidaris. Regularized Feature Selection in Reinforcement Learning. *Machine Learning* 100(2), pages 655–676, September 2015.
3. S. Niekum, S. Osentoski, G.D. Konidaris, S. Chitta, B. Marthi, and Andrew G. Barto. Learning Grounded Finite-State Representations from Unstructured Demonstrations. *The International Journal of Robotics Research*, 34(2), pages 131–157, February 2015.
4. E.L. Nelson, G.D. Konidaris, and N.E. Berthier. Hand preference status and reach kinematics in infants. In press, *Infant Behavior and Development*, 37(4), 615–623, November 2014.
5. G.D. Konidaris, I. Scheidwasser and A.G. Barto. Transfer in Reinforcement Learning using Common Features. *Journal of Machine Learning Research* 13:1333–1371, May 2012.
6. E.L. Nelson, G.D. Konidaris, N.E. Berthier, M.C. Braun, M.S.F.X. Novak, S.J. Suomi and M.A. Novak. Kinematics of reaching and implications for handedness in rhesus monkey infants. *Developmental Psychobiology* 54(4), pages 460–467, May 2012.
7. G.D. Konidaris, S.R. Kuindersma, R.A. Grupen and A.G. Barto, Robot Learning from Demonstration by Constructing Skill Trees. *The International Journal of Robotics Research* 31(3), pages 360–375, March 2012.
8. G.D. Konidaris and G.M. Hayes. An Architecture for Behavior-Based Reinforcement Learning. *Adaptive Behavior* 13(1), pages 5–32, March 2005.

### Highly Refereed Conference Papers

9. S. James, G.D. Konidaris, and B. Rosman. An Analysis of Monte Carlo Tree Search. To appear, *Proceedings of the Thirty-First AAAI Conference on Artificial Intelligence*, February 2017.
10. S. Murray, W. Floyd-Jones, Y. Qi, G.D. Konidaris and D. Sorin. The Microarchitecture of a Real-Time Robot Motion Planning Accelerator. In *Proceedings of the The 49th Annual IEEE/ACM International Symposium on Microarchitecture*, October 2016.
11. G.D. Konidaris. Constructing Abstraction Hierarchies Using a Skill-Symbol Loop. In *Proceedings of the 25th International Joint Conference on Artificial Intelligence*, pages 1648–1654, July 2016.
12. F. Doshi-Velez and G.D. Konidaris. Hidden Parameter Markov Decision Processes: A Semiparametric Regression Approach for Discovering Latent Task Parametrizations. In *Proceedings of the 25th International Joint Conference on Artificial Intelligence*, pages 1432–1440, July 2016.
13. S. Murray, W. Floyd-Jones, Y. Qi, D. Sorin and G.D. Konidaris. Robot Motion Planning on a Chip. In *Robotics: Science and Systems XII*, June 2016.
14. Y. Zhou and G.D. Konidaris. Representing and Learning Complex Object Interactions. In *Robotics: Science and Systems XII*, June 2016.
15. W. Masson, P. Ranchod, and G.D. Konidaris. Reinforcement Learning with Parameterized Actions. In *Proceedings of the Thirtieth AAAI Conference on Artificial Intelligence*, pages 1934–1940, February 2016.
16. P. S. Thomas, S. Niekum, G. Theodorou, and G. D. Konidaris. Policy Evaluation using the  $\Omega$ -Return. In *Advances in Neural Information Processing Systems 29*, pages 334–342, December 2015.
17. P. Ranchod, B. Rosman, G.D. Konidaris. Nonparametric Bayesian Reward Segmentation for Skill Discovery Using Inverse Reinforcement Learning. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 471–477, September 2015.

18. G.D. Konidaris, L.P. Kaelbling, and T. Lozano-Perez. Symbol Acquisition for Probabilistic High-Level Planning. In *Proceedings of the Twenty Fourth International Joint Conference on Artificial Intelligence*, pages 3619–3627, July 2015.
19. C. Amato, G.D. Konidaris, A. Anders, G. Cruz, J.P. How, and L.P. Kaelbling. Policy Search for Multi-Robot Coordination under Uncertainty. In *Robotics: Science and Systems XI*, July 2015.
20. C. Amato, G.D. Konidaris, G. Cruz, C. Maynor, J.P. How, and L.P. Kaelbling. Planning for Decentralized Control of Multiple Robots Under Uncertainty. In *Proceedings of the 2015 IEEE International Conference on Robotics and Automation*, pages 1241-1248, May 2015.
21. G.D. Konidaris, L. Kaelbling and T. Lozano-Perez. Constructing Symbolic Representations for High-Level Planning. In *Proceedings of the Twenty-Eighth AAAI Conference on Artificial Intelligence*, pages 1932–1940, July 2014.
22. N. Hollingsworth, J. Meyer, R. McGee, J. Doering, G.D. Konidaris and L. Kaelbling. Optimizing a Start-Stop Controller using Policy Search. In *Twenty-Sixth Annual Conference on Innovative Applications of Artificial Intelligence*, pages 2984–2989, July 2014.
23. B.C. da Silva, G.D. Konidaris, and A.G. Barto. Active Learning of Parameterized Skills. In *Proceedings of the Thirty First International Conference on Machine Learning*, pages 1737-1745, June 2014.
24. B.C. da Silva, G. Baldassarre, G.D. Konidaris, and A.G. Barto. Learning Parameterized Motor Skills on a Humanoid Robot. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 5239–5244, May 2014.
25. C. Amato, G.D. Konidaris and L.P. Kaelbling. Planning with Macro-Actions in Decentralized POMDPs. In *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems*, pages 1273–1280, May 2014.
26. G. Goretkin, A. Perez, R. Platt Jr., G.D. Konidaris. Optimal Sampling-Based Planning for Linear-Quadratic Kinodynamic System. *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 2429–2436, May 2013.
27. S. Niekum, S. Osentoski, G.D. Konidaris and A.G. Barto. Learning and Generalization of Complex Tasks from Unstructured Demonstrations. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 5239–5246, October 2012.
28. B.C da Silva, G.D. Konidaris and A.G. Barto. Learning Parameterized Skills. In *Proceedings of the Twenty-Ninth International Conference in Machine Learning*, pages 1679–1686, June 2012.
29. A. Perez, R. Platt, G.D. Konidaris, L. Kaelbling and T. Lozano-Perez. LQR-RRT\*: Optimal Sampling-Based Motion Planning with Automatically Derived Extension Heuristics. In *Proceedings of 2012 IEEE International Conference on Robotics and Automation*, pages 2537–2542, May 2012.
30. G.D. Konidaris, S. Niekum and P.S. Thomas. TD $_{\gamma}$ : Re-evaluating Complex Backups in Temporal Difference Learning. *Advances in Neural Information Processing Systems 24*, pages 2402–2410, December 2011.
31. G.D. Konidaris, S.R. Kuindersma, R.A. Grupen and A.G. Barto. Autonomous Skill Acquisition on a Mobile Manipulator. In *Proceedings of the Twenty-Fifth AAAI Conference on Artificial Intelligence*, pages 1468–1473, August 2011.
32. G.D. Konidaris, S. Osentoski and P.S. Thomas. Value Function Approximation in Reinforcement Learning using the Fourier Basis. In *Proceedings of the Twenty-Fifth AAAI Conference on Artificial Intelligence*, pages 380–385, August 2011.
33. G.D. Konidaris, S.R. Kuindersma, A.G. Barto and R.A. Grupen. Constructing Skill Trees for Reinforcement Learning Agents from Demonstration Trajectories. In *Advances in Neural Information Processing Systems 23*. pages 1162–1170, December 2010.
34. G.D. Konidaris and A.G. Barto. Skill Discovery in Continuous Reinforcement Learning Domains using Skill Chaining. In *Advances in Neural Information Processing Systems 22*, pages 1015–1023. December 2009.

35. G.D. Konidaris and A.G. Barto. Efficient Skill Learning Using Abstraction Selection. In *Proceedings of the Twenty First International Joint Conference on Artificial Intelligence*, pages 1107–1112, July 2009.
36. G.D. Konidaris and A.G. Barto. Sensorimotor Abstraction Selection for Efficient, Autonomous Robot Skill Acquisition. In *Proceedings of the 7th IEEE International Conference on Development and Learning*, pages 151–156, August 2008.
37. L. Georgopoulos, G.M. Hayes and G.D. Konidaris. A Forward Model of Optic Flow for Detecting External Forces. In *Proceedings of the IEEE/RSJ 2007 International Conference on Intelligent Robots and Systems*, pages 913–918, October 2007.
38. G.D. Konidaris and A.G. Barto. Building Portable Options: Skill Transfer in Reinforcement Learning. In *Proceedings of the Twentieth International Joint Conference on Artificial Intelligence*, pages 895–900, January 2007.
39. G.D. Konidaris and A.G. Barto. An Adaptive Robot Motivational System. In *From Animals to Animats 9: Proceedings of the 9th International Conference on the Simulation of Adaptive Behavior*, pages 346–356, September 2006.
40. G.D. Konidaris and A.G. Barto. Autonomous Shaping: Knowledge Transfer in Reinforcement Learning. In *Proceedings of the Twenty Third International Conference on Machine Learning*, pages 489–496, June 2006.
41. S. Rauchas, B. Rosman, G.D. Konidaris and I.D. Sanders. Language Performance at High School and Success in First Year Computer Science. In *Proceedings of the SIGCSE 2006 Technical Symposium on Computer Science Education*, pages 398–402, March 2006.
42. F.J. Stewart, T. Taylor and G.D. Konidaris. METAMorph: Experimenting with Genetic Regulatory Networks for Artificial Development. In *Proceedings of the VIIIth European Conference on Artificial Life*, pages 108–117, September 2005.
43. G.D. Konidaris and G.M. Hayes. Estimating Future Reward in Reinforcement Learning Animats using Associative Learning. In *From Animals to Animats 8: Proceedings of the 8th International Conference on the Simulation of Adaptive Behavior*, pages 297–304, July 2004.
44. G.D. Konidaris, T. Taylor and J.C.T. Hallam. HydroGen: Automatically Generating Self-Assembly Code for Hydron Units. In *Proceedings of the Seventh International Symposium on Distributed Autonomous Robotic Systems*, pages 33–42, June 2004.

### Chapters in Books

45. A.G. Barto, G.D. Konidaris, and C.M. Vigorito. Behavioral Hierarchy: Exploration and Representation. In *Computational and Robotic Models of the Hierarchical Organization of Behavior*, Baldassarre, Gianluca; Mirulli, Marco (Eds.), pages 13–46, Springer, Berlin, October 2013.

### Lightly Refereed Conference Papers, Workshops, Symposia and Posters

46. T. Killian, G.D. Konidaris, and F. Doshi-Velez. Transfer Learning Across Patient Variations with Hidden Parameter Markov Decision Processes. *The NIPS 2016 Workshop on Machine Learning for Health*, December 2016.
47. S. James, B. Rosman and G.D. Konidaris. An Investigation into the Effectiveness of Heavy Rollouts in UCT. *The IJCAI 2016 Workshop on General Intelligence in Game-Playing Agents*, July 2016.
48. B. Burchfiel and G.D. Konidaris. Generalized 3D Object Representation using Bayesian Eigenobjects. *The RSS 2016 Workshop on Geometry and Beyond: Representations, Physics, and Scene Understanding for Robotics*, June 2016.
49. G.D. Konidaris and F. Doshi-Velez. Hidden Parameter Markov Decision Processes: An Emerging Paradigm for Modeling Families of Related Tasks. In *Proceedings of the AAAI 2014 Fall Symposium on Knowledge, Skill, and Behavior Transfer in Autonomous Robots*, November 2014.
50. C. Amato, G.D. Konidaris, J.P. How and L.P. Kaelbling. Decentralized Decision-Making Under Uncertainty for Multi-Robot Teams. In *Proceedings of the 2014 IROS Workshop on The Future of Multiple-Robot Research and Its Multiple Identities*, September 2014.



51. C. Amato, G.D. Konidaris, G. Cruz, C.A. Maynor, J.P. How and L.P. Kaelbling. Planning for Decentralized Control of Multiple Robots Under Uncertainty. In *Proceedings of the 2014 ICAPS Workshop on Planning and Robotics*, June 2014.
52. C. Trewick, P. Ranchod and G.D. Konidaris. Preferential Targeting of HIV Infected Hubs in a Scale-free Sexual Network. In the *Annual Conference of the Computational Social Science Society of the Americas*, August 2013.
53. G.D. Konidaris. Robots, Skills, and Symbols (Extended Abstract). In *Proceedings of the 2013 Workshop on Machine Learning for Interactive Systems*, August 2013.
54. G.D. Konidaris, L.P. Kaelbling and T. Lozano-Perez. Symbol Acquisition for Task-Level Planning. In the *AAAI 2013 Workshop on Learning Rich Representations from Low-Level Sensors*, July 2013.
55. G.D. Konidaris, S. Kuindersma, S. Niekum, R.A. Grupen and A.G. Barto. Robot Learning: Some Recent Examples. In *Proceedings of the Sixteenth Yale Workshop on Adaptive and Learning Systems*, pages 71–76, Center for Systems Science, Dunham Laboratory, Department of Electrical Engineering, Yale University, New Haven CT, June 2013.
56. F. Doshi-Velez and G.D. Konidaris. Transfer Learning by Discovering Latent Task Parametrizations. In the *NIPS 2012 Workshop on Bayesian Nonparametric Models For Reliable Planning And Decision-Making Under Uncertainty*, December 2012.
57. G.D. Konidaris, S.R. Kuindersma, R.A. Grupen and A.G. Barto. Acquiring Transferrable Mobile Manipulation Skills. In the *RSS 2011 Workshop on Mobile Manipulation: Learning to Manipulate*, June 2011.
58. G.D. Konidaris, S.R. Kuindersma, R.A. Grupen and A.G. Barto. CST: Acquiring Skill Trees by Demonstration. In the *ICML 2011 Workshop on New Developments in Imitation Learning*, July 2011.
59. S. Kuindersma, G. Konidaris, R. Grupen, A. Barto. Learning from a Single Demonstration: Motion Planning with Skill Segmentation (poster abstract). In the *NIPS Workshop on Learning and Planning in Batch Time Series Data*, Vancouver, December 2010.
60. G.D. Konidaris and A.G. Barto. Towards the Autonomous Acquisition of Robot Skill Hierarchies (poster abstract). In the *Robotics: Science and Systems Workshop on Bridging the Gap Between High-Level Discrete Representations and Low-Level Continuous Behaviors*, Seattle, June 2009.
61. G.D. Konidaris and S. Osentoski. Value Function Approximation using the Fourier Basis (extended abstract). In the *Multidisciplinary Symposium on Reinforcement Learning*, Montreal, Canada, June 2009.
62. G.D. Konidaris and A.G. Barto. Skill Chaining: Skill Discovery in Continuous Domains (extended abstract). In the *Multidisciplinary Symposium on Reinforcement Learning*, Montreal, Canada, June 2009.
63. G.D. Konidaris. *Autonomous Robot Skill Acquisition (thesis summary)* Doctoral Symposium, 23rd National Conference on Artificial Intelligence (AAAI 2008), July 2008.
64. E.L. Nelson, G.D. Konidaris and N.E. Berthier. *Using Real-Time Motion Capture to Measure Handedness in Infants*. Poster presentation at the XVIth Biennial International Conference on Infant Studies, Vancouver, Canada, March 2008.
65. G.D. Konidaris. A Framework for Transfer in Reinforcement Learning. In the *ICML-06 Workshop on Structural Knowledge Transfer for Machine Learning*, Pittsburgh PA, June 2006.
66. A. Stout, G.D. Konidaris and A.G. Barto. Intrinsically Motivated Reinforcement Learning: A Promising Framework for Developmental Robot Learning. In *Proceedings of the 2005 AAAI Spring Symposium on Developmental Robotics*, March 2005.
67. G.D. Konidaris and G.M. Hayes. Anticipatory Learning for Focusing Search in Reinforcement Learning Agents. In the *Second Workshop on Anticipatory Behavior in Adaptive Learning Systems*, Los Angeles CA, July 2004.
68. G.D. Konidaris, D.A. Shell and N. Oren. Evolving Neural Networks to Play the Capture Game. In *Proceedings of the SAICSIT 2002 Postgraduate Symposium*, September 2002.

69. J. Adler, G.D. Christelis, J.A. Deneys, G.D. Konidakis, G. Lewis, A.G. Lipson, R.L. Phillips, D.K. Scott-Dawkins, D.A. Shell, B.V. Strydom, W.M. Trakman and L.D. Van Gool. Finding Adjacencies in Non-Overlapping Polygons. Electronic Paper, *Proceedings of the 2001 SAICSIT Conference*, September 2001.

### Dissertations and Technical Reports

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71. G.D. Konidakis. *Autonomous Robot Skill Acquisition*. PhD Thesis, Department of Computer Science, University of Massachusetts, May 2011.
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