

George Konidakis

<http://cs.brown.edu/people/gdk>
gdk@brown.edu

Academic Employment

- **Brown University**
Associate Professor, Department of Computer Science July 2022–present.
John E. Savage Assistant Professor of Computer Science July 2019–June 2022.
Assistant Professor, Department of Computer Science Sep. 2016–June 2019.
- **Duke University** Sep. 2014–Sep. 2016.
Assistant Professor, Departments of Computer Science & Electrical and Computer Engineering.
- **MIT Computer Science and Artificial Intelligence Laboratory** Jan. 2011–Aug. 2014.
Postdoctoral research with Professors Leslie Kaelbling and Tomas Lozano-Perez.

Education

- **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.

Industrial Experience

- **Chief Roboticist, Realtime Robotics** March 2016–present.
Co-founded a startup to commercialize our invention of a specialized robot motion planning processor capable of sub-millisecond planning (see publications 62, 77, and 80).
- **Co-founder, Lelapa AI** February 2023–present.
Co-founded a commercial AI lab to develop new AI technologies by and for Africans.

Teaching Experience

- **Brown University**
 - Artificial Intelligence (CSCI 1410) Spring 2017, Fall 2017–2019, Fall 2021–2022.
 - Reintegrating AI (CSCI 2951X) Spring 2018, Spring 2020–2021, Fall 2021, Spring 2023.

- **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**
 - *Robot Motion Planning on a Chip* December 3rd 2020.
Cornell University, course ECE 4960 (Fast Robots).
 - *Reinforcement Learning for Robotics* May 7th 2013.
Massachusetts Institute of Technology, course 6.S064 (Introduction to Machine Learning).
 - *Hierarchical Reinforcement Learning* Nov. 5th 2012.
Brown University, course CSCI2951-F (Learning and Sequential Decision Making).
 - *Reinforcement Learning* Dec. 1st 2011,
Nov. 27th 2012.
Massachusetts Institute of Technology, course 6.867 (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.

Postgraduate Research Student Supervision

At Brown University:

PhD Dissertations

- Matthew Corsaro, *Learning Task-Specific Grasps*. May 2023
- Eric Rosen, *Abstraction for Autonomous Human-Robot Interaction* June 2023
(Co-advised with Prof. Stefanie Tellex.)
- Ben Abbatematteo, *Exploiting Structure for Efficient Robotic Manipulation* October 2023
- Camerson Allen, *Structured Abstractions for General-Purpose Decision Making* October 2023

ScM Projects

- Seungchan Kim, *Adaptive Tuning of Temperature in Mellowmax using Meta-Gradients*. May 2020

- Josh Roy, *Visual Transfer for Reinforcement Learning via Wasserstein Domain Confusion*. May 2020
- Matt Slivinski. *Robust Deep Skill Chaining*. May 2020

At Duke University:

PhD Dissertations

- Benjamin Burchfiel, *3D Object Representations for Robot Perception*. Sep 2019
- Barrett Ames, *Towards Efficient and Robust Robot Planning*. Oct 2022

At the University of the Witwatersrand:

PhD Dissertations

- Michael Mitchley, *Adaptive Value Function Approximation in Reinforcement Learning using Wavelets*. (Co-advised with Prof. Ebrahim Momoniat) Dec 2015
- Dean Wookey, *Representation Discovery Using a Fixed Basis in Reinforcement Learning*. (Co-advised with Prof. Clint van Alten) Aug 2016
- Pravesh Ranchod, *Skill Discovery From Multiple Related Demonstrators*. (Co-advised with Prof. Clint van Alten and Dr. Benjamin Rosman) Dec 2017
- Steven James, *Learning Portable Symbolic Representations*. (Co-advised with Prof. Benjamin Rosman.) Sep 2021

MSc Dissertations

- Warwick Masson, *Reinforcement Learning with Parameterized Actions*. (Co-supervised with Dr. Pravesh Ranchod) Aug 2016
- Steven James, *The Effect of Simulation Bias on Action Selection in Monte Carlo Tree Search*. (Co-supervised with Dr. Pravesh Ranchod and Dr. Benjamin Rosman) Aug 2016
- Craig Bester, *Multi-Pass Deep Q-Networks for Reinforcement Learning with Parameterised Action Spaces*. (Co-advised with Mr. Steven James and Dr. Pravesh Ranchod.) March 2019

Invited Talks

Conferences

- *Signal to Symbol (via Skills)*. Third Conference on Robot Learning, Osaka, Japan, November 18th 2019.
- *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.

Workshops

- *Reintegrating AI: Skills, Symbols, and the Sensorimotor Dilemma*. ICRA 2023 Workshop on Effective Representations, Abstractions, and Priors for Robot Learning. May 29th 2023.
- *Symbolic Foundations for Planning and Communication*. ICRA 2023 Workshop on Life-Long Learning with Human Help. May 29th 2023.
- *Reintegrating AI: Skills, Symbols, and the Sensorimotor Dilemma*. CORL 2022 Workshop on Aligning Robot Representations with Humans, December 15th 2022.
- *Learned Abstractions for Intelligent Behavior*. CORL 2022 Workshop on Learning, Perception, and Abstraction for Long-Horizon Planning, December 15th 2022.

- *Reintegrating AI: Skills, Symbols, and the Sensorimotor Dilemma*. IROS 2022 Workshop on Life-long Learning of High-level Cognitive and Reasoning Skills, October 23rd 2022.
- *Reintegrating AI: Skills, Symbols, and the Sensorimotor Dilemma*. RSS 2022 2nd Workshop on Scaling Robot Learning, June 27th 2022.
- *Realtime Robotics: From RSS to Factory Floor*. ICRA 2022 WS on Challenges in Applying Academic Research to Real World Robotics, May 23rd 2022.
- *Signal to Symbol (via Skills)*. NeurIPS 2021 Deep Reinforcement Learning Workshop, December 13th 2021.
- *Signal to Symbol (via Skills)*. 5th Workshop on Semantic Policy and Action Representations for Autonomous Robots, at IROS, September 27th 2021.
- *Signal to Symbol (via Skills)*. IndabaX South Africa, September 17th 2021.
- *Grounded Symbolic Representations for Human-Robot Communication*. ICDL 2021 Workshop on Human-Aligned Reinforcement Learning for Autonomous Agents and Robots, August 27th 2021.
- *Signal to Symbol (via Skills)*. RSS 2021 Workshop on Declarative and Neurosymbolic Representations in Robot Learning and Control, July 15th 2021.
- *Learning Plannable Task Models*. RSS 2021 Workshop on Integrating Planning and Learning. July 12th 2021.
- *Signal to Symbol (via Skills)*. NeurIPS 2020 Workshop on Biological and Artificial Reinforcement Learning, December 12th 2020.
- *Learning Portable Skills and Symbols*. AAAI 2020 Workshop on Generalization in Planning, New York City, February 7th 2020.
- *Learning Abstract Models for Symbolic High-Level Planning*. Third International Workshop on Intrinsically-Motivated Open-Ended Learning, Rome, Italy, October 5th 2017.
- *Robots, Skills, and Symbols*. IROS 2017 Second Workshop on Machine Learning Methods for High-Level Cognitive Capabilities in Robotics, Vancouver Canada, September 28th 2017.
- *High-Level Symbolic Representations for Planning*. RSS 2017 Workshop on: The What Without the How: Specifying Planning Problems in Robotics, Cambridge MA, July 15th 2017.
- *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.
- *Robots, Skills, and Symbols*. Schloss Dagstuhl Seminar on Mechanisms of Ongoing Development in Cognitive Robotics, February 13th 2013.

- MIT. *Reintegrating AI: Skills, Symbols, and the Sensorimotor Dilemma*, Center of Brains, Minds, and Machines (Quest Seminar Series), October 18th 2022.
- Navy Center for Applied Research in Artificial Intelligence. *Signal to Symbol (via Skills)*, NCARAI Seminar, December 7th 2020.
- Carnegie Mellon University. *Signal to Symbol (via Skills)*, Robotics Institute Seminar, November 16th 2018.
- 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

- Action Editor, Journal of Machine Learning Research, November 2015—present.
- Action Editor, Journal of Artificial Intelligence Research, October 2017—September 2020.
- Advisory Board, Deep Learning Indaba, September 2017—present.
- Local Co-Chair (with Michael Frank), The Multi-disciplinary Conference on Reinforcement Learning and Decision Making, 2022.
- Area Co-Chair (with Ifat Levy), The Multi-disciplinary Conference on Reinforcement Learning and Decision Making, 2019.

- 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, 2016, 2020, 2021).
 - International Journal of Robotics Research (2013, 2016, 2017, 2018).
 - Autonomous Robots (2015).
 - Artificial Intelligence (2012, 2013, 2014, 2015).
 - IEEE Transactions on Robotics (2005, 2013, 2014, 2015, 2017).
 - 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, 2020).
 - International Conference on Machine Learning (2009, 2012, 2013, 2014, 2015, 2017, 2018, 2019).
 - Robotics: Science and Systems (2013, 2014, 2015, 2017, 2018, 2019, 2020).
 - International Joint Conference on Artificial Intelligence (2009, 2011, 2013, 2015, 2016).
 - AAAI Conference on Artificial Intelligence (2010, 2013, 2016, 2017).
 - 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, 2017, 2018).
 - AAAI Conference on Artificial Intelligence (2017, 2018).
 - International Conference on Robot Learning (2017, 2018)
 - IEEE/RSJ International Conference on Intelligent Robots and Systems (2017)
 - IEEE International Conference on Robotics and Automation (2017, 2018)
 - International Conference on Learning Representations (2019)
- 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).

Grants and Funding

- *Designing the Sensorimotor Substrate*. Boston Dynamics AI Institute. Award amount: \$1,500,000.
- *Establishing a Unifying Artificial Intelligence Model for Generally-Capable Robots*. Office of Naval Research (with Co-PI Stefanie Tellex). Grant number N00014-22-1-2592, award amount: \$3,359,988.
- *Humanoid Robotics Platform for Investigating the Sensorimotor Basis of Compositional Reasoning*. Air Force Office of Scientific Research (DURIP Program) (with Co-PI Stefanie Tellex). Grant number FA9550-21-1-0308, award amount: \$391,761.
- *Skill Learning for Goal-Directed Behavior by Humanoid Robots in Complex Unstructured Environments*. Office of Naval Research (with PI Stefanie Tellex). Grant number N00014-21-1-2584, award amount: \$1,913,500.
- *Decision-Theoretic Sequential Decision Making for Observer-Aware, Goal-Directed Behavior in Swarms*. Office of Naval Research. Grant number N00014-21-1-2200, award amount: \$405,000.
- *Learning Task-Specific Representations for Broadly Capable Reinforcement Learning Agents*. National Science Foundation (with Co-PI Professor Michael Littman). Grant number 1955361, award amount: \$1,199,684.
- *CAREER: Learning Symbolic Representations for Robot Manipulation*. National Science Foundation. Grant number 1844960, award amount: \$549,988.
- *Online, Incremental Skill and Representation Acquisition for Lifelong Learning*. DARPA Seedling. Grant number W911NF1820268, award amount: \$360,890.
- *Hidden Parameter Markov Decision Processes: Exploiting Structure in Families of Tasks*. National Science Foundation (with PI Professor Finale Doshi-Velez). Grant number 1717569, award amount: \$450,000 (Brown University share \$208,000).
- *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 + \$64,127 *Director's Fellowship* (additional third year).
- *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

- Amazon Research Award, for *Learning Composable Manipulation Skills*. July 2022.
- IROS 2021 Best RoboCup Paper Award, for *Multi-Resolution POMDP Planning for Multi-Object Search in 3D*. Kaiyu Zheng, Yoonchang Sung, George Konidaris, and Stefanie Tellex, September 2021.
- The Karen T. Romer Prize for Undergraduate Advising and Mentoring, Brown University, 2021.
- The IJCAI-JAIR Best Paper Prize, for *From Skills to Symbols: Learning Symbolic Representations for Abstract High-Level Planning*. George Konidaris, Leslie Kaelbling, and Tomas Lozano-Perez, 2020.
- NSF CAREER Award, 2019.
- Best Paper nomination at the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems, for *Bounded-Error LQR-Trees*. Barrett Ames and George Konidaris. November 2019.
- Richard B. Salomon Faculty Research Award, Brown University, 2018.
- DARPA Director's Fellowship, 2017.
- 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 (I²) 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

Journal Articles

1. A. Pacheck, S. James, G.D. Konidaris, and H. Kress-Gazit. Automatic Encoding and Repair of Reactive High-Level Tasks with Learned Abstract Representations. *International Journal of Robotics Research* 42(4-5), pages 263–288, April 2023.

2. M. M. Baker, A. New, M. Aguilar-Simon, Z. Al-Halah, S.M.R. Arnold, E. Ben-Iwhiwhu, A.P. Brna, E. Brooks, R.C. Brown, Z. Daniels, A. Daram, F. Delattre, R. Dellana, E. Eaton, H. Fu, K. Grauman, J. Hostetler, S. Iqbal, C. Kent, N. Ketz, S. Kolouri, G.D. Konidaris, D. Kudithipudi, E. Learned-Miller, S. Lee, M.L. Littman, S. Madireddy, J.A. Mendez, E.Q. Nguyen, C.D. Piatko, P.K. Pilly, A. Raghavan, A. Rahman, S.K. Ramakrishnan, N. Ratzlaff, A. Soltoggio, P. Stone, I. Sur, Z. Tang, S. Tiwari, K. Vedder, F. Wang, Z. Xu, A. Yanguas-Gil, H. Yedidsion, S. Yu, G.K. Vallabha. A Domain-Agnostic Approach for Characterization of Lifelong Learning Systems. *Neural Networks* volume 160, pages 274-296, March 2023.
3. B. Ames, J. Morgan, and G.D. Konidaris. IKFlow: Generating Diverse Inverse Kinematics Solutions. *IEEE Robotics and Automation Letters* 7(3), pages 7177–7184, July 2022.
4. O. Kroemer, S. Niekum, and G.D. Konidaris. A Review of Robot Learning for Manipulation: Challenges, Representations, and Algorithms. *Journal of Machine Learning Research* 22(30), pages 1–82, January 2021.
5. B. Keller, M. Draelos, K. Zhou, R. Qian, A.N. Kuo, G.D. Konidaris, K. Hauser, and J.A. Izatt. Optical Coherence Tomography-Guided Robotic Ophthalmic Microsurgery via Reinforcement Learning from Demonstration. *IEEE Transactions on Robotics* 36(4), 1207–1218, August 2020.
6. G.D. Konidaris. On The Necessity of Abstraction. *Current Opinion in Behavioral Sciences* 29 (Special Issue on Artificial Intelligence), pages 1–7, October 2019.
7. E. Rosen, D. Whitney, E. Phillips, G. Chen, J. Tompkin, G.D. Konidaris, and S. Tellex. Communicating And Controlling Robot Arm Motion Intent Through Mixed Reality Head-Mounted Displays. *The International Journal of Robotics Research* 38(12-13), October 2019.
8. C. Amato, G.D. Konidaris, L.P. Kaelbling, and J.P. How. Modeling and Planning with Macro-Actions in Decentralized POMDPs. *Journal of Artificial Intelligence Research* 64, pages 817–859, March 2019.
9. Y. Zhou, B. Burchfiel, and G.D. Konidaris. Representing, Learning, and Controlling Complex Object Interactions. *Autonomous Robots* 42(7), pages 1355–1367, April 2018.
10. E.L. Nelson, N.E. Berthier, and G.D. Konidaris. Handedness and Reach-to-Place Kinematics in Adults: Left-Handers Are Not Reversed Right-Handers. *Journal of Motor Behavior* 50:4, pages 381–391, July 2018.
11. G.D. Konidaris, L.P. Kaelbling, and T. Lozano-Perez. From Skills to Symbols: Learning Symbolic Representations for Abstract High-Level Planning. *Journal of Artificial Intelligence Research* 61, pages 215–289, January 2018.
12. 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.
13. D. Wookey and G.D. Konidaris. Regularized Feature Selection in Reinforcement Learning. *Machine Learning* 100(2), pages 655–676, September 2015.
14. 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.
15. E.L. Nelson, G.D. Konidaris, and N.E. Berthier. Hand preference status and reach kinematics in infants. *Infant Behavior and Development*, 37(4), 615–623, November 2014.
16. 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.
17. 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.
18. 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.

19. 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

20. A. Bagaria, B.M. Abbatematteo, O. Gottesman, M. Corsaro, S. Rammohan, and G.D. Konidaris, Effectively Learning Initiation Sets in Hierarchical Reinforcement Learning. Accepted, *Neural Information Processing Systems 37*, December 2023.
21. E. Rosen, S. James, S. Orozco, V. Gupta, M. Merlin, S. Tellex, and G.D. Konidaris. Synthesizing Navigation Abstractions for Planning with Portable Manipulation Skills. Accepted, *Proceedings of the 7th Annual Conference on Robot Learning*, November 2023.
22. R. Ma, L. Lam, B.A. Spiegel, A. Ganeshan, R. Patel, B. Abbatematteo, D.P. Paulius, S. Tellex, and G.D. Konidaris. Skill Generalization With Verbs. In *Proceedings of the 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems*, October 2023.
23. S. Shaw, D. Jha, A. Raghunathan, R.I. Corcodel, D. Romeres, G.D. Konidaris, and D. Nikovski. Constrained Dynamic Movement Primitives for Collision Avoidance in Novel Environments. In *Proceedings of the 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems*, October 2023.
24. I. Idrees, T. Yun, N. Sharma, N. Gopalan, S. Tellex, and G.D. Konidaris. Improved Inference of Human Intent by Combining Plan Recognition and Language Feedback. In *Proceedings of the 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems*, October 2023.
25. R. Rodriguez-Sanchez, B.A. Spiegel, J. Wang, R. Patel, G.D. Konidaris, and S. Tellex. RLang: A Declarative Language for Describing Partial World Knowledge to Reinforcement Learning Agents. In *Proceedings of the Fortieth International Conference on Machine Learning*, July 2023.
26. S. Lobel, A. Bagaria, and G.D. Konidaris. Flipping Coins to Estimate Pseudocounts for Exploration in Reinforcement Learning. In *Proceedings of the Fortieth International Conference on Machine Learning*, July 2023.
27. H. Fu, S. Yu, S. Tiwari, M.L. Littman, and G.D. Konidaris. Meta-Learning Parameterized Skills. In *Proceedings of the Fortieth International Conference on Machine Learning*, July 2023.
28. H. Fu, J. Yao, O. Gottesman, F. Doshi-Velez, and G.D. Konidaris. Performance Bounds for Model and Policy Transfer in Hidden-parameter MDPs. In *Proceedings of the Eleventh International Conference on Learning Representations*, May 2023.
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