

Research Interests

Robotics, Artificial Intelligence, Perception.

Education

- Dr. rer.-nat. (Ph.D.), University of Bonn, Germany December 1998
Computer Science – *summa cum laude* (Thesis).
- Diplom (M.Sc.), University of Bonn, Germany April 1993
Computer science (major) and physics (minor) – *summa cum laude*.
- Vordiplom (B.Sc.), University of Bonn, Germany March 1990
Computer science (major), economics and physics (minor).

Positions

- Senior Director of Robotics Research, NVIDIA 2017 – present
- Professor, University of Washington, Computer Science & Engineering 2013 – present
- Associate Professor, University of Washington, Computer Science & Engineering 2005 – 2013
- Director, Intel Labs Seattle 2009 – 2011
- Assistant Professor, University of Washington, Computer Science & Engineering 2000 – 2005
- Post-doc, Carnegie Mellon University, School of Computer Science 1998 – 2000

Awards and Honors

- **Fellow, ACM:** Association for Computing Machinery, 2021.
- **Pioneer in Robotics and Automation Award:** IEEE Robotics and Automation Society (RAS), 2020.
- **Fellow, IEEE:** Institute of Electrical and Electronics Engineers, 2015.
- **Fellow, AAAI:** Association for the Advancement of Artificial Intelligence, 2011.
- **RSS 2021 Best Student Paper Award:** Robotics: Science and Systems, *DiSEct: A Differentiable Simulation Engine for Autonomous Robotic Cutting*.
- **ICRA 2021 Best Paper Award on Human Robot Interaction:** IEEE International Conference on Robotics & Automation, *Reactive Human-To-Robot Handovers of Arbitrary Objects*.
- **ICRA 2020 Milestone Paper Award:** International Conference on Robotics & Automation, *Monte Carlo localization for mobile robots*, published in ICRA 1999 (most influential ICRA paper 1998-2002).
- **ICRA 2017 Best Robotic Vision Paper Award:** IEEE International Conference on Robotics & Automation, *Self-supervised visual descriptor learning for dense correspondence*.
- **AAAI 2017 Classic Paper Award:** AAAI Conference on Artificial Intelligence, *Monte Carlo localization: Efficient Position Estimation for Mobile Robots*, published in AAAI 1999.
- **AAAI 2016 Classic Paper Award:** AAAI Conference on Artificial Intelligence, *The Interactive Museum Tour-Guide Robot*, published in AAAI 1998.
- **CVPR 2015 Best Paper Award:** IEEE Computer Society Conference on Computer Vision and Pattern Recognition, *DynamicFusion: Reconstruction and tracking of non-rigid scenes in real-time*.
- **Finalist: ICRA Best Vision Paper Award:** ICRA, *Unsupervised feature learning for 3d scene labeling*, 2014; *Depth-based tracking with physical constraints for robot manipulation*, 2015.

- **Honorable Mention: AAAI 2014 Classic Paper Award:** AAAI Conference on Artificial Intelligence, *Estimating the Absolute Position of a Mobile Robot Using Position Probability Grids*, published in 1996.
- **ICRA 2014 Cognitive Robotics Best Paper Award:** IEEE International Conference on Robotics & Automation, *Multi-task policy search for robotics*.
- **Ubicomp 2013 10-Year Impact Award:** International Conference on Ubiquitous Computing, *Inferring high-level behavior from low-level sensors*, published 2003.
- **Friedrich Wilhelm Bessel Research Award:** Alexander von Humboldt Foundation, Germany, 2013.
- **AIJ Prominent Paper Award:** Artificial Intelligence Journal, *Learning and inferring transportation routines*, 2012.
- **ICRA 2011 Best Vision Paper Award:** IEEE International Conference on Robotics & Automation, *Sparse distance learning for object recognition combining RGB and depth information*.
- **IROS 2007 Best Student Paper Award** (as advisor): IEEE/RSJ International Conference on Intelligent Robots and Systems, *GP-UKF: Unscented Kalman filters with Gaussian process prediction and observation models*.
- **ISWC 2005 Best Paper Award:** International Symposium on Wearable Computers, *Fine-grained activity recognition by aggregating abstract object usage*.
- **Honorable Mention: 2004 IJCAII-JAIR Best Paper Prize:** Journal of Artificial Intelligence Research (JAIR), *Markov Localization for Mobile Robots in Dynamic Environments*, published 1999.
- **AAAI 2004 Outstanding Paper Award:** National Conference on Artificial Intelligence, *Learning and Inferring Transportation Routines*.
- **RoboCup 2004 Scientific Challenge (Best Paper) Award:** International RoboCup Symposium, *Map-based Multiple Model Tracking of a Moving Object*.
- **NSF CAREER Award:** *Probabilistic Methods for Multi-Robot Collaboration*, March 2001.
- **ICRA 2000 Best Paper Award:** IEEE International Conference on Robotics & Automation, *A Real-Time Algorithm for Mobile Robot Mapping with Applications to Multi-Robot and 3D Mapping*.
- **ECCAI Artificial Intelligence Dissertation Award:** European Coordinating Committee for Artificial Intelligence, *Markov Localization: A Probabilistic Framework for Mobile Robot Localization and Navigation*, 2000.
- **AKI Dissertation Award:** “Arbeitsgemeinschaft der deutschen KI-Institute” (German AI institutes), *Markov Localization: A Probabilistic Framework for Mobile Robot Localization and Navigation*, 1999.
- **DAGM 1999 Outstanding Paper Award:** 21st Symposium on Pattern Recognition, *Collaborative Multi-Robot Localization*.
- **AAAI 1998 Outstanding Paper Award:** National Conference on Artificial Intelligence, *The Interactive Museum Tour-guide Robot*.
- **IROS 1998 Best Paper Award:** IEEE/RSJ International Conference on Intelligent Robots and Systems, *An Experimental Comparison of Localization Methods*.
- **Second Place Award:** *clean-up an office event* at the AAAI autonomous mobile robot competition, 1994.

Professional Activities

SELECTED EDITORIAL BOARD / CHAIRMANSHIP

- **Associate Editor** *The International Journal of Robotics Research* (IJRR), 2017 - 2019.
- Member *AGE-WELL International Scientific Advisory Committee (ISAC)*, since 2014.
- **Editor** *IEEE Transactions on Robotics* (T-RO), 2010 - 2015.
- **General Chair** *Robotics: Science and Systems* (RSS), 2014.
- **Program Chair** *Robotics: Science and Systems* (RSS), 2013.
- Conference Committee Chair *Association for the Advancement of Artificial Intelligence* (AAAI), 2009 – 2012.
- Advisory Board *Journal of Artificial Intelligence Research* (JAIR), since 2011.
- Associate Editor *Journal of Artificial Intelligence Research* (JAIR), 2008 – 2011.

- RSS Foundation Board, since 2009.
- Conference Board *Robotics: Science and Systems* (RSS), since 2005.
- Local arrangements co-chair *Robotics: Science and Systems* (RSS), 2009.
- **Program co-chair** *Twenty-Third Conference on Artificial Intelligence* (AAAI), 2008.
- Associate Editor *IEEE Transactions on Robotics* (T-RO), 2004 – 2007.
- Publication chair *Robotics: Science and Systems* (RSS), 2006.
- Workshops co-chair *National Conference on Artificial Intelligence* (AAAI), 2004.
- NSF Reviewing Panels: 2012, 2004, 2001.

Selected Invited Talks

- **Distinguished Lecture:** Colorado School of Mines, Golden, CO, February 2018.
- University of California at Berkeley, EECS Colloquium Series, Berkeley, CA, February 2018.
- Harvard University, Computer Science Colloquium Series, Cambridge, MA, October 2017.
- **Plenary:** IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vancouver, BC, Canada, September 2017.
- **Keynote:** Robotics: Science & Systems Conference (RSS), Boston, MA, July 2017.
- Toyota Technological Institute of Chicago, TTIC Colloquium, Chicago, IL, May 2017.
- **Distinguished Lecturer Series**, UMass Amherst, College of Information and Computer Sciences, Amherst, MA, October 2016.
- Stanford University, The Future of Artificial Intelligence Event, Stanford, CA, June 2016.
- **Keynote:** IEEE International Conference on Robotics & Automation (ICRA), Stockholm, Sweden, May 2016.
- Arizona State University, ASU Robotics Seminar, Tempe, AZ, April 2016.
- **Distinguished Lecture:** Simon Fraser University, Burnaby, BC, Canada, February 2016.
- University of Washington College of Engineering: 2015 Engineering Lecture Series, November 2015.
- Massachusetts Institute of Technology, MIT Robotics Seminar Series, Cambridge, MA, May 2015.
- **Keynote:** 12th Asian Conference on Computer Vision (ACCV), Singapore, November 2014.
- Brown University, Humanity Centered Robotics Multidisciplinary (HCRI) Speaker Series, Providence, RI, September 2014.
- **Distinguished CS Colloquium:** Department of Computer Science, ETH Zurich, April 2014.
- **Keynote:** 3D Vision Conference (3DV), Seattle, WA, June 2013.
- **Keynote:** Tenth Conference on Computer and Robot Vision (CRV), Regina, Canada, May 2013.
- University of Maryland, Center for Automation Research, Rosenfeld Lecture: Distinguished Seminar Series on Vision, College Park, MD, April 2013.
- University of Pennsylvania, Institute for Research in Cognitive Science and GRASP Laboratory, IRCS/GRASP Joint Colloquium, Philadelphia, PA, November 2012.
- Carnegie Mellon University, Robotics Institute, RI Seminar Series, Pittsburgh, PA, April 2012.
- **Keynote:** 15th annual RoboCup International Symposium, Istanbul, Turkey, July 2011.
- Cornell University, Department of Computer Science, CS Colloquium, Ithaca, NY, November 2010.
- University of Rochester, Department of Computer Science, Rochester, NY, November 2010.
- Georgia Institute of Technology, Center for Robotics and Intelligent Machines, RIM Seminar Series, Atlanta, GA, March 2010.
- **Keynote:** Robotics Industry Forum, Orlando, FL, January 2010.
- **Keynote:** 4th European Conference on Mobile Robots (ECMR), Dubrovnik, Croatia, September 2009.

- Dartmouth College, Computer Science Seminar Series, Dartmouth, NH, February 2009.
- **Keynote:** 11th International Conference on Information Fusion (FUSION), Cologne, Germany, July 2008.
- Carnegie Mellon University, School of Computer Science, Intelligence Seminar Series, Pittsburgh, PA, November 2007.
- Carnegie Mellon University, Robotics Institute, RI Seminar Series, Pittsburgh, PA, November 2007.
- **Plenary talk:** 30th German Conference on Artificial Intelligence (KI), Osnabrück, Germany, September 2007.
- Georgia Institute of Technology, Center for Robotics and Intelligent Machines, RIM Seminar Series, Atlanta, GA, August 2007.
- University of Sydney, Institute of Transport and Logistics Studies, ITLS-Sydney Seminar Series, Sydney, Australia, May 2007.
- **Plenary talk:** Australasian Conference on Robotics and Automation, Auckland, New Zealand, December 2006.
- University of Freiburg, Faculty Seminar, Freiburg, Germany, June 2005.
- Canadian Conference on Computer and Robot Vision, Victoria, Canada, May 2005.
- University of Michigan, Artificial Intelligence Seminar, Ann Arbor, MI, January 2005.
- University of Texas at Austin, Forum for Artificial Intelligence, Austin, TX, October 2004.
- Stanford University, Broad Area Colloquium For AI-Geometry-Graphics-Robotics-Vision, Stanford, CA, September 2004.
- University of Southern California, CRES Robotics Seminar Series, Los Angeles, CA, November 2003.
- University of Pennsylvania, GRASP Seminar Series, Philadelphia, PA, November 2003.
- Oregon Graduate Institute, Portland, OR, January 2003.

Publication List

Most recent publications can be found on Google Scholar

<http://scholar.google.com/citations?hl=en&user=DqXsbPAAAAAJ>

BOOKS AND EDITED VOLUMES

- [1] D. Fox, L. Kavraki, and K. Kurniawati, editors. *Robotics: Science and Systems X*, 2014. ISBN 978-0-9923747-0-9.
- [2] S. Williams and D. Fox. Special issue on Robotics: Science and Systems. *International Journal of Robotics Research (IJRR)*, 34, 2015. Guest editors.
- [3] G. Dudek and D. Fox. Special issue on Robotics: Science and Systems. *Autonomous Robots*, 37(4), 2014. Guest editors.
- [4] P. Newman, D. Fox, and D. Hsu, editors. *Robotics: Science and Systems IX*, 2013. ISBN 978-981-07-3937-9.
- [5] D. Fox and C. Gomes, editors. *Proceedings of the Twenty-Third AAAI Conference on Artificial Intelligence*, number ISBN 978-1-57735-368-3. AAAI Press, 2008.
- [6] G. Sukhatme, S. Schaal, W. Burgard, and D. Fox, editors. *Robotics: Science and Systems II*. MIT Press, 2007.
- [7] S. Thrun, W. Burgard, and D. Fox. *Probabilistic Robotics*. MIT Press, Cambridge, MA, September 2005. ISBN 0-262-20162-3.

REFEREED JOURNAL / MAGAZINE ARTICLES

- [1] Rika Antonova, Jingyun Yang, Priya Sundaesan, Dieter Fox, Fabio Ramos, and Jeannette Bohg. A bayesian treatment of real-to-sim for deformable object manipulation. In *RA-L Special*, April 2022.

- [2] D. Gordon, A. Farhadi, and D. Fox. Re³: Real-time recurrent regression networks for visual tracking of generic objects. In *IEEE Robotics and Automation Letters*, 2018.
- [3] T. Schimdt, R. Newcombe, and D. Fox. Self-supervised visual descriptor learning for dense correspondence. *IEEE Robotics and Automation Letters*, 2017. **[ICRA Best Vision Paper Award]**
- [4] M. Chung, A. Friesen, D. Fox, A. Meltzoff, and R. Rao. A Bayesian developmental approach to robotic goal-based imitation learning. *PLoS One*, 10(11), 2015.
- [5] T. Schmidt, R. Newcombe, and D. Fox. DART: dense articulated real-time tracking with consumer depth cameras. *Autonomous Robots*, 39(3), 2015.
- [6] M. Deisenroth, D. Fox, and C.E. Rasmussen. Gaussian processes for data-efficient learning in robotics and control. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 37(2), 2015.
- [7] L. Bo, X. Ren, and D. Fox. Learning hierarchical sparse features for RGB-(D) object recognition. *International Journal of Robotics Research (IJRR)*, 33, 2014.
- [8] X. Ren, D. Fox, and K. Konolige. Change their perception: RGB-D for 3d modeling and recognition. *Robotics & Automation Magazine*, 20(4), December 2013.
- [9] A. Deshpande, J. Ko, D. Fox, and Y. Matsuoka. Control strategies for the index finger of a tendon-driven hand. *International Journal of Robotics Research (IJRR)*, 32(1), 2013.
- [10] S. Bachrach, A. Prentice, R. He, P. Henry, A. Huang, M. Krainin, D. Maturana, D. Fox, and N. Roy. Estimation, planning, and mapping for autonomous flight using an RGB-D camera in GPS-denied environments. *International Journal of Robotics Research (IJRR)*, 31(11), 2012.
- [11] P. Henry, M. Krainin, E. Herbst, X. Ren, and D. Fox. RGB-D mapping: Using Kinect-style depth cameras for dense 3D modeling of indoor environments. *International Journal of Robotics Research (IJRR)*, 31(4), 2012.
- [12] M. Krainin, P. Henry, X. Ren, and D. Fox. Manipulator and object tracking for in hand 3d object modeling. *International Journal of Robotics Research (IJRR)*, 30(9), 2011.
- [13] A. Stupakov, E. Hanusa, D. Vijaywargi, D. Fox, and J. Bilmes. The design and collection of COSINE, a multi-microphone in-situ speech corpus recorded in noisy environments. *Computer Speech and Language*, 26:52–66, 2011.
- [14] B. Douillard, D. Fox, F. Ramos, and H. Durrant-Whyte. Classification and semantic mapping of urban environments. In *International Journal of Robotics Research (IJRR)*, 30(1), 2011.
- [15] J. Ko and D. Fox. Learning GP-BayesFilters via Gaussian process latent variable models. *Autonomous Robots*, 30(1), 2011.
- [16] K. Lai and D. Fox. Object recognition in 3D point clouds using web data and domain adaptation. *International Journal of Robotics Research (IJRR)*, 29(8), 2010.
- [17] J. Ko and D. Fox. GP-BayesFilters: Bayesian filtering using Gaussian process prediction and observation models. *Autonomous Robots*, 27(1), 2009.
- [18] R. Vincent, D. Fox, J. Ko, K. Konolige, B. Limketkai, B. Morisset, C. Ortiz, D. Schulz, and B. Stewart. Distributed multirobot exploration, mapping, and task allocation. *Annals of Mathematics and Artificial Intelligence*, 52(2–4), 2008.
- [19] L. Liao, D. J. Patterson, D. Fox, and H. Kautz. Learning and inferring transportation routines. *Artificial Intelligence (AIJ)*, 171(5-6):311–331, 2007. **[2012 AIJ Prominent Paper Award]**
- [20] L. Liao, D. Fox, and H. Kautz. Extracting places and activities from GPS traces using hierarchical conditional random fields. *International Journal of Robotics Research (IJRR)*, 26(1), 2007.
- [21] D. Fox, J. Ko, K. Konolige, B. Limketkai, and B. Stewart. Distributed multi-robot exploration and mapping. *Proc. of the IEEE*, 94(7):1325–1339, 2006. Special Issue on Multirobot Systems.
- [22] M. Philipose, K.P. Fishkin, M. Perkowitz, D.J. Patterson, D. Hähnel, D. Fox, and H. Kautz. Inferring activities from interactions with objects. *IEEE Pervasive Computing Magazine*, 3(4):50–57, 2004.
- [23] C.T. Kwok, D. Fox, and M. Meilä. Real-time particle filters. *Proceedings of the IEEE*, 92(2):469–484, 2004. Special Issue on Sequential State Estimation.

- [24] D. Fox. Adapting the sample size in particle filters through KLD-sampling. *International Journal of Robotics Research (IJRR)*, 22(12):985–1003, 2003.
- [25] D. Fox, J. Hightower, L. Liao, D. Schulz, and G. Borriello. Bayesian filtering for location estimation. *IEEE Pervasive Computing Magazine*, 2(3):24–33, 2003. Special Issue on Dealing with Uncertainty.
- [26] D. Schulz, W. Burgard, and D. Fox. People tracking with a mobile robot using sample-based joint probabilistic data association filters. *International Journal of Robotics Research (IJRR)*, 22(2):99–116, 2003.
- [27] M. Beetz, T. Arbuckle, T. Belker, M. Bennewitz, W. Burgard, A.B. Cremers, D. Fox, H. Grosskreutz, D. Haehnel, and D. Schulz. Integrated plan-based control of autonomous service robots in human environments. *IEEE Intelligent Systems*, 16(5):56–65, 2001.
- [28] S. Thrun, D. Fox, W. Burgard, and F. Dellaert. Robust Monte Carlo localization for mobile robots. *Artificial Intelligence (AIJ)*, 128(1-2):99–141, 2001.
- [29] S. Thrun, M. Beetz, M. Bennewitz, W. Burgard, A. B. Cremers, F. Dellaert, D. Fox, D. Haehnel, C. Rosenberg, N. Roy, J. Schulte, and D. Schulz. Probabilistic algorithms and the interactive museum tour-guide robot minerva. *International Journal of Robotics Research (IJRR)*, 19(11):972–999, 2000.
- [30] D. Fox, W. Burgard, H. Kruppa, and S. Thrun. A probabilistic approach to collaborative multi-robot localization. *Autonomous Robots (ARJ)*, 8(3):325–344, 2000.
- [31] D. Schulz, W. Burgard, D. Fox, S. Thrun, and A.B. Cremers. Web interfaces for mobile robots in public places. *IEEE-Magazine on Robotics and Automation*, 7(1):48–56, 2000.
- [32] D. Fox, W. Burgard, and S. Thrun. Markov localization for mobile robots in dynamic environments. *Journal of Artificial Intelligence Research (JAIR)*, 11:391–427, 1999.
[honorable mention: 2004 IJCAII-JAIR best paper prize]
- [33] W. Burgard, A.B. Cremers, D. Fox, D. Hähnel, G. Lakemeyer, D. Schulz, W. Steiner, and S. Thrun. Experiences with an interactive museum tour-guide robot. *Artificial Intelligence (AIJ)*, 114(1-2):3–55, 1999.
- [34] D. Fox, W. Burgard, and S. Thrun. Active markov localization for mobile robots. *Robotics and Autonomous Systems (RAS)*, 25:195–207, 1998.
- [35] M. Beetz, W. Burgard, D. Fox, and A.B. Cremers. Integrating active localization into high-level robot control systems. *Robotics and Autonomous Systems (RAS)*, 23:205–220, 1998.
- [36] S. Thrun, D. Fox, and W. Burgard. A probabilistic approach to concurrent mapping and localization for mobile robots. *Machine Learning*, 31:29–53, 1998. Also appeared in *Autonomous Robots* 5:253–271, joint issue.
- [37] D. Fox, W. Burgard, and S. Thrun. The dynamic window approach to collision avoidance. *IEEE Robotics & Automation Magazine*, 4(1):23–33, March 1997.
- [38] W. Burgard, A.B. Cremers, D. Fox, D. Hähnel, A.M. Kappel, and S. Lüttringhaus-Kappel. Verbesserte Brandfrüherkennung im Steinkohlenbergbau durch Vorhersage von CO-Konzentrationen. In *KI Themenheft Data Mining*, volume 1:46–53. ScienTec Publishing GmbH, 1998. In German.

REFEREED CONFERENCE / SYMPOSIUM ARTICLES

Acceptance rate given if below 40%

- [1] Yashraj Narang, Iretiayo Akinola, Yunrong Guo, Ankur Handa, Michelle Lu, Miles Macklin, Adam Moravanszky, Philipp Reist, Gavriel State, Kier Storey, Lukasz Wawrzyniak, and Dieter Fox. Factory: Fast contact for robotic assembly. In *Proceedings of Robotics: Science and Systems (RSS)*, July 2022.
- [2] Pratyusha Sharma, Balakumar Sundaralingam, Valts Blukis, Chris Paxton, Tucker Hermans, Antonio Torralba, Jacob Andreas, and Dieter Fox. Correcting robot plans with natural language feedback. In *Proceedings of Robotics: Science and Systems (RSS)*, July 2022.
- [3] Ankit Goyal, Arsalan Mousavian, Chris Paxton, Yu-Wei Chao, Brian Okorn, Jia Deng, and Dieter Fox. Ifor: Iterative flow minimization for robotic object rearrangement. In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2022.

- [4] Weiyu Liu, Chris Paxton, Tucker Hermans, , and Dieter Fox. Structformer: Learning spatial structure for language-guided semantic rearrangement of novel objects. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, May 2022.
- [5] Wei Yang, Balakumar Sundaralingam, Chris Paxton, Iretoiyo Akinola, Yu-Wei Chao, Maya Cakmak, and Dieter Fox. Model predictive control for fluid human-to-robot handovers. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, May 2022.
- [6] Yu-Wei Chao, Chris Paxton, Yu Xiang, Wei Yang, Balakumar Sundaralingam, Tao Chen, Adithyavairavan Murali, Maya Cakmak, and Dieter Fox. Handoversim: A simulation framework and benchmark for human-to-robot object handovers. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, May 2022.
- [7] Karl Van Wyk, Mandy Xie, Anqi Li, Muhammad Asif Rana, Buck Babich, Bryan Peele, Qian Wan, Iretoiyo Akinola, Balakumar Sundaralingam, Dieter Fox, Byron Boots, and Nathan D. Ratliff. Geometric fabrics: Generalizing classical mechanics to capture the physics of behavior. In *ICRA 2022/*, May 2022.
- [8] Wentao Yuan, Chris Paxton, Karthik Desingh, and Dieter Fox. Sornet: Spatial object-centric representations for sequential manipulation. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [9] Lirui Wang, Yu Xiang, Wei Yang, Arsalan Mousavian, and Dieter Fox. Goal-auxiliary actor-critic for 6d robotic grasping with point clouds. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [10] Valts Blukis, Chris Paxton, Dieter Fox, Animesh Garg, and Yoav Artzi. A persistent spatial semantic representation for high-level natural language instruction execution. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [11] Mohit Shridhar, Lucas Manuelli, and Dieter Fox. Cliport: What and where pathways for robotic manipulation. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [12] Chris Xie, Yu Xiang, Arsalan Mousavian, and Dieter Fox. Rice: Refining instance masks in cluttered environments with graph neural networks. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [13] Chris Paxton, Chris Xie, Tucker Hermans, and Dieter Fox. Predicting stable configurations for semantic placement of novel objects. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [14] Mohak Bhardwaj, Balakumar Sundaralingam, Arsalan Mousavian, Nathan D. Ratliff, Dieter Fox, Fabio Ramos, and Byron Boots. Storm: An integrated framework for fast joint-space model-predictive control for reactive manipulation. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2021.
- [15] Muhammad Asif Rana, Anqi Li, Dieter Fox, Sonia Chernova, Byron Boots, and Nathan Ratliff. Towards coordinated robot motions: End-to-end learning of motion policies on transform trees. In *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, September 2021.
- [16] Michael Lutter, Shie Mannor, Jan Peters, Dieter Fox, and Animesh Garg. Value iteration in continuous actions, states and time. In *Proceedings of the International Conference on Machine Learning (ICML)*, July 2021.
- [17] Michael Lutter, Shie Mannor, Jan Peters, Dieter Fox, and Animesh Garg. Robust value iteration for continuous control tasks. In *Proceedings of Robotics: Science and Systems (RSS)*, July 2021.
- [18] Eric Heiden, Miles Macklin, Yashraj Narang, Dieter Fox, Animesh Garg, and Fabio Ramos. Disect: A differentiable simulation engine for autonomous robotic cutting. In *Proceedings of Robotics: Science and Systems (RSS)*, July 2021.
- [19] Ahmed Qureshi, Arsalan Mousavian, Chris Paxton, and Dieter Fox. Nerp: Neural rearrangement planning for unknown objects. In *Proceedings of Robotics: Science and Systems (RSS)*, July 2021.
- [20] Yu-Wei Chao, Wei Yang, Yu Xiang, Pavlo Molchanov, Ankur Handa, Jonathan Tremblay, Yashraj Narang, Karl Van Wyk, Umar Iqbal, Stan Birchfield, Jan Kautz, and Dieter Fox. Dexycb: A benchmark for capturing hand grasping of objects. In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2021.

- [21] Luyang Zhu, Arsalan Mousavian, Yu Xiang, Hammad Mazhar, Jozef van Eenbergen, Shoubhik Debnath, and Dieter Fox. Rgb-d local implicit function for depth completion of transparent objects. In *Proceedings of the Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2021.
- [22] Yashraj Narang*, Balakumar Sundaralingam*, Miles Macklin, Arsalan Mousavian, and Dieter Fox. Sim-to-real for robotic tactile sensing via physics-based simulation and learned latent projections. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, June 2021.
- [23] Martin Sundermeyer, Arsalan Mousavian, Rudolph Triebel, and Dieter Fox. Contact-graspnet: Efficient 6-dof grasp generation in cluttered scenes. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, June 2021.
- [24] Fahad Islam, Chris Paxton, Clemens Eppner, Bryan Peele, Maxim Likhachev, and Dieter Fox. Alternative paths planner (app) for provably fixed-time manipulation planning in semi-structured environments. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, June 2021.
- [25] Clemens Eppner, Arsalan Mousavian, and Dieter Fox. Acronym: A large-scale grasp dataset based on simulation. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, June 2021.
- [26] Michael Danielczuk*, Arsalan Mousavian*, Clemens Eppner, and Dieter Fox. Object rearrangement using learned implicit collision functions. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, June 2021.
- [27] Wei Yang, Chris Paxton, Arsalan Mousavian, Yu-Wei Chao, Maya Cakmak, and Dieter Fox. Reactive human-to-robot handovers of arbitrary objects. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, June 2021.
- [28] Yunzhu Li, Antonio Torralba, Animashree Anandkumar, Dieter Fox, and Animesh Garg. Causal discovery in physical systems from videos. In *NeurIPS 2020*, December 2020.
- [29] Ching-An Cheng, Mustafa Mukadam, Jan Issac, Stan Birchfield, Dieter Fox, Byron Boots, and Nathan Ratliff. Rmpflow: A geometric framework for generation of multi-task motion policies. November 2020.
- [30] Yu Xiang, Christopher Xie, Arsalan Mousavian, and Dieter Fox. Learning rgb-d feature embeddings for unseen object instance segmentation. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2020.
- [31] Carolyn Matl, Yashraj Narang, Dieter Fox, Ruzena Bajcsy, and Fabio Ramos. Stressd: Sim-to-real from sound for stochastic dynamics. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2020.
- [32] Bhairav Mehta, Ankur Handa, Dieter Fox, and Fabio Ramos. A user’s guide to calibrating robotics simulators. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2020.
- [33] Alexander Lambert, Adam Fishman, Dieter Fox, Byron Boots, and Fabio Ramos. Stein variational model predictive control. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2020.
- [34] M. Asif Rana, Anqi Li, Dieter Fox, Sonia Chernova, Byron Boots, and Nathan Ratliff. Towards coordinated robot motions: End-to-end learning of motion policies on transform trees. In *Proceedings of the Conference on Robot Learning (CoRL)*, November 2020.
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