Vikash Kumar
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Interests

Embodied Artificial Intelligence, Embodied Multimodal Foundation Models, Data-Driven Robot Learning, Behavior Synthesis

Positions

Adjunct Professor, Robotics Institute, CMU	Jan'23 - Now
FAIR-MetaAI, Research Scientist (mentor: Abhinav Gupta)	Nov'20 - Apr'23
Assistant Professor, DIRO, Université de Montréal+CIFAR chair nomination + associate faculty, Mila	(declined)
Google Brain, Research Scientist (mentor: Vincent Vanhoucke)	Feb'18 - Aug'19
OpenAI, Member of technical staff (mentor: Elon Musk)	Apr'17 - Oct'17

Entrepreneurship

MyoLab.ai, Co-Founder, CEO	May'23 - Now
Roboti LLC, Founding Member (startup: acquired by DeepMind)	Jan'12 - Nov'20

Education

University of Berkeley, Berkeley Artificial Intelligence Research Lab (BAIR), Postdoctoral scholar	Oct'17 - Jan'18
University of Washington, Ph.D. in Computer Science and Engineering	Feb'13 - Feb'17
University of Washington, M.S. in Computer Science and Engineering	Sep'10 - Feb'13
Indian Institute of Technology (IIT) Kharagpur, M.S. in Mathematics and Computing	July'09 - Apr'10
Indian Institute of Technology (IIT) Kharagpur, B.S. in Mathematics and Computing	July'05 - Apr'09

Honors And Awards

Early Career Keynote Speaker at the Conference of Robot Learning	2024
Young Alumnus Award, IIT-Kharagpur	2024
Canada CIFAR AI Chair Award (declined)	2020
Google Cloud Research Award	2019
Best Master's Thesis Award, Dept. of Mathematics and Computing, IIT Kharagpur	2010
All-Round Excellence Award, IIT-Kharagpur (Ankik Dhar Memorial)	2010
IIT Merit Scholarship for Master's studies	2009
All-Round Excellence Award, Nehru, IIT Kharagpur (Spirit Of Nehru Award)	2009, 2010
Early Excellence Award, Nehru, IIT Kharagpur (Budding Spirit Award)	2007
Inter-IIT Sports Scholarship, IIT Kharagpur	2006
IIT Merit Scholarship for undergraduate studies	2005-2009

Paper Awards

Best Paper Award at IEEE, ICRA	2024
Best Paper Award Finalist in Robot Manipulation at IEEE, ICRA	2024
Best Paper Presentation Award at CoRL in Robot Learning Workshop	2023
Best Paper Award at ICRA in the Scaling Robot Learning Workshop	2022
Best Paper Award in Manipulation at IEEE, ICRA	2016
Best Project Award at Industry Affiliates Symposium, UW (Viewer's choice award)	2013

Select Media Coverage

- Teach@Meta, Engadget, Gizmodo, Yahoo, Economic Times, CNET: MyoSuite: Embodied AI platform that unifies neural & motor intelligence. May2022
- The New Yorker: A Revolution in How Robots Learn. Dec 2024
- TechCrunch, IEEE Spectrum, HackADay, CMU: RoboAgent: A universal agent with diverse manipulation skills. Aug2023
- VentureBeat: Google AI researchers want to teach robots tasks through self-supervised reverse engineering. May2020
- CNN: Google shows off far-flung AI research projects. Jan2020
- VentureBeat: Google's robotic hand AI can learn to rotate Baoding balls with minimal training data. Sept2019
- The New York Times: Inside Google's Rebooted Robotics Program. Mar2019
- Columns: Inventing the future: A 'new landmark' for computer science and engineering. Feb2019
- NeuroHive: A Robot To Use Fingers Like Human Oct2019
- The New York Times: How robot hands are evolving to do what ours do. July2018
- New Atlas: Bridging the gap between science and fiction. Dec2016
- Communications of the ACM: Hand Jive: A Robot Hand Learns to Spin. Aug2016
- Reuters: Robot hand gets a human touch. May2016
- Wired: This dexterous robot can teach itself to spin a tube of coffee beans. May2016
- Business Insider: Researchers created a robotic hand that is eerily human-like and can learn on its own. May2016
- MIT Tech Review: ADROIT featured in TR35. 2016

- UW360: A robotic hand that can move like a human hand, Aug2016
- ScienceDaily: This 5-fingered robot hand learns to get a grip on its own. May2016
- Engadget: Robot hand learns to twirl objects on its own. May2016
- GeekWire: UW team creates a robotic hand that learns to become more dexterous than yours. May2016
- Gizmodo: This Robot's Teaching Itself to Twirl a Stick. May2016
- UWToday: This five-fingered robot hand learns to get a grip on its own. May2016
- UW CSE News: UW CSE robot hand teaches itself to manipulate objects. May2016
- CNN: The superhuman robot hand that learns from its mistakes. May2016
- Tech Insider: Researchers created a robotic hand that is eerily human-like and can learn on its own. May2016
- Indian Express: Five-fingered robot hand learns to get a grip on its own. May2016
- UK's Daily Mirror: Incredible five-fingered robotic hand has the ability to learn from its own experiences. May2016
- Economic Times: Five-fingered robot hand learns to get a grip on its own. May2016
- ZDNet: Five-fingered robot hand has a mind of its own. May2016
- Kurzweil: This five-fingered robot hand is close to human in functionality. May2016
- Most significant bit: Adroit: The robot hand for which practice makes perfect. UW-CSE, Summer'16
- Futurism: This five-fingered robot hand is nimbler than your own. May2016
- Hackaday: Robot cheerleader just needs a hand to learn basic tricks. May2016
- Design: Five-fingered robot hand that learns tasks on its own. May2016
- Interesting engineering: Robotic Hands that Teach Themselves to Move. May2016
- FoxNews: Cool robot hand learns as it goes. May2016
- IEEE Spectrum: Next-Gen Prosthetic Limbs in Simulation and Reality. Feb2015
- UW CSE News: People's choice award. Oct2013
- The New York Times: A robot with a delicate touch. Sep2012
- The Daily: UW programmers create software for disaster response robot. Nov2012

Invited Talks (excluding conference/workshop paper presentations)

- Medical Rehab Resource Network, National Institute of Health, C-Start Chicago, May'25
- IIT-Chennai, Robotics – the future is anything but optimal, Mar'2025
- ICRA'24, Sim2Real beyond robotics, May'24
- ICRA'24, Physiological Embodied Intelligence, May'24
- ICRA'23, MyoSuite 2.0: Towards generalizable Physiological Agents. May'23
- HHMI Janelia Research, Is Brain in the business of making decisions? June'23
- ICRA'22, London. MyoSuite 2.0: Towards generalizable Physiological Agents. May'23
- IIT-Delhi, Building foundation models to parent robots. Jan'23
- MIT. CSL seminar. Physiological Motor Control, Sept'22
- CMU brAIn seminar. Physiological Motor Control, Sept'22
- MIT. CSL seminar. Rethinking Dexterous Manipulation, Sept'22
- University of Montreal. Learning at your Fingertips, Aug'20
- Facebook AI Research. Learning at your Fingertips, June'20
- Univ. of Texas, Austin. Learning at your Fingertips, May'20
- ADSI summer school: Algorithmic Foundations on Learning and Control, Aug'19
- Univ. Of Washington: Guest lecture in Deep Reinforcement Learning class, May'18
- IIT-Delhi: Recent realizations in Robotic Learning, Oct'17
- OpenAI: Learning Dexterous Manipulation in the real world, Dec'16
- DeepMind: Learning Dexterous Manipulation via Experience and Imitation, Dec'16
- Google-Brain: Learning Dexterous Manipulation in High-Dimensional spaces, Dec'16
- Kindred: Learning Dexterous Manipulation via Experience and Imitation, Dec'16
- Vicarious: Learning Dexterous Manipulation via Experience and Imitation, Dec'16
- Oculus Research, Redmond: Manipulators and Manipulation in High Dimensional Spaces, Mar'16
- MIT, CSAIL: Towards dexterous hand manipulation, Sept'15
- Harvard: Towards Dexterous Hand Manipulation, Sept'15
- Microsoft Research, Redmond: Real-time synthesis of hand manipulation via Dimensionality Augmentation, Feb'14

Thesis

Ph.D. : Manipulators and Manipulation in High-Dimensional Spaces
Advisor: Dr. Emanuel Todorov, Applied Math & CSE, Univ. of Washington, USA
Dr. Sergey Levine, EECS, Univ. of California, Berkeley, USA

M.S. : Fuzzy Genetic Algorithms(FGA) (**BEST M.S. THESIS AWARD**)
Advisor: Prof. Debjani Chakraborty, Dept. of Mathematics, IIT Kharagpur

B.S. : New Genetic Algorithm-based multi-objective optimization algorithm(NMGA)
Advisor: Prof. Nirupam Chakraborty, Head of Dept. of Metallurgical & Materials Engineering, IIT-Kharagpur

Students Mentored

- Patrick Lancaster, Post Doc under Vikash Kumar (me) at FAIR, MetaAI.(Sept'22-now)

- Tony Zhao, Ph.D. in CS under Prof. Chelsea Finn at Stanford University. (June'22-July'23)
- Rutav Shah, Ph.D. University of Texas at Austin under Yuke Zhu. (May'20-July23)
- Homanga Bharadhwaj, Ph.D. in RI CMU under Abhinav Gupta and Shubham Tulsiani (Aug' 22- July' 23)
- Sudeep Dasari, Ph.D. in RI CMU under Abhinav Gupta (Aug'21-July'23)
- Raunaq Bhirangi, Ph.D. in RI CMU under Abhinav Gupta and Carmel Majidi. (Jun'22-Jan'23)
- Gaoyue (Kathy) Zhou, MS in Robotics CMU under Abhinav Gupta (Jun'21-)
- Jason Ma, Ph.D. in University of Pennsylvania, Osbert Bastani, and Dinesh Jayaraman (Jun'22-May'23)
- Zoey Chen, Ph.D. student in University of Washington under Dieter Fox and Abhishek Gupta (Jun'21-Jun'22)
- Liyiming (Kay) Ke, Ph.D in CSE, UW under Siddhartha Srinivasa and Byron Boots (Jun'21-Jun'22)
- Mandi Zhao, Ph.D in CSE, Columbia University under Prof. Shuram Song. (summer'22)
- Suraj Nair, Ph.D. in CS under Prof. Chelsea Finn and Prof. Silvio Savarese at Stanford University. (June'21-Dec'21)
- Alla Zhou, Ph.D. in CS under Prof. Chelsea Finn at Stanford University. (June'21-Dec'21)
- Abhishek Gupta, Ph.D. in EECS under Prof. Sergey Levine and Prof. Pieter Abbeel at UC Berkeley. (Apr'19-Dec'21)
- Aravind Rajeshwaran, Ph.D. in CS under Prof. Sham Kakade and Prof. Emo Todorov at U of Washington. (Apr'16-Dec'20)
- Anusha Nagabandi, Ph.D. in EECS under Prof. Sergey Levine and Prof. Ron Fearing at UC Berkeley. (Sept'18-Aug'19)
- Suraj Nair, Ph.D. in CS under Prof. Chelsea Finn and Prof. Silvio Savarese at Stanford University. (June'18-Sept'19)
- Kristian Hartikainen, now pursuing Ph.D. under Prof. Shimon Whiteson at the University of Oxford
- Dibya Ghosh, Bachelor's in EECS at UC Berkeley, (starting Ph.D. at UC Berkeley 2020)
- Arshit Sharma B. Tech in Electrical Engineering, Indian Institute of Technology, Kanpur. (Ph.D applicant 2020)
- Henry Zhu, Bachelor's in EECS at UC Berkeley. (Ph.D applicant 2020)
- Visak CV, Master's in ME, University of Washington (Mar'15-Aug'16) (Pursuing Ph.D. at Georgia Tech under Dr. C. Karen Liu)
- Kaiyu Zheng, Bachelor's in CS, University of Washington (Pursuing Ph.D. in at Brown University, under Prof. Stefanie Tellex)
- Dylan Holmes, Bachelor's in Computer Science, University of Washington (Jul'14-Mar'16)
- Anselm Nicklas, Visiting student, Electrical and Computer Engineering, Technische Universität München, Germany

Achievements

Awards

- Gold, Open hardware, KSHITIJ'09- Asia's largest techno-management Fest
- Most industrially feasible, Techkriti'09, IIT Kanpur
- Silver, Open hardware, KSHITIJ'08, IIT Kharagpur
- Gold, Geobotics, Great Step'08, IIT Kharagpur
- Gold in Inter-hall Hardware modeling '07, IIT Kharagpur
- Silver in Inter-hall Hardware modeling '08, IIT Kharagpur
- Bronze, Robotic Water-polo, KSHITIJ'06, IIT Kharagpur
- Gold, Inter-hall Product design '06, IIT Kharagpur
- Bronze, Inter-hall ad-design'09, IIT Kharagpur
- Several state/district-level awards in Hockey, Volleyball, Fine Arts

Grants

- DeepMind Sponsorship Grant for MyoChallenge, 2023, 2024
- Google Cloud Research Grant 2022, 2023
- NSF Student Travel Grant, 2014
- Center for Neuroscience Travel Grant, Univ. of Washington, 2012, 2014, 2015

Service And Leadership

- Area Chair
  - Conference of Robot Learning, 2025
- Associate Editor
  - IEEE International Conference on Robotics and Automation (ICRA) - 2019, 2021, 2023
  - Conference on Robot Learning (CoRL) - 2021
  - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) - 2021, 2022, 2023
- Organizing Committee
  - MyoSymposium: 2022, 2023, 2024,
  - MyoChallenge: 2022, 2023, 2024, 2025
  - Robotics Science and Systems Workshop, What did we learn from the DARPA Robotics Challenge, June 2013
  - University of Washington, Robotics Colloquium, 2014
- Conference program Committee / Reviewer
  - Robotics Science and Systems, 2020
  - IEEE Robotics and Automation Letters (RA-L), 2019
  - Science, 2018
  - IEEE International Conference on Robotics and Automation (ICRA), 2014, 2015, 2016, 2017, 2018, 2019
  - Mechatronics, 2018
  - IROS 2014, 2017
- Grant Committee
  - Dutch Research Council, Netherlands Organization for Scientific Research, 2020

- Admissions Committee
  - Computer science graduate admissions committee, University of Washington, 2013, 2014
- Position of Responsibilities
  - Vice President, Dept. of Mathematics 08- 09, IIT Kharagpur
  - Chief Editor, AWAAZ – campus monthly newsletter 06- '09
  - Member of Kharagpur Robotics & Artificial Intelligence Group (KRAIG)

Select Publications (full list at Google Scholar 🔗)

- Semantically Controllable Augmentations for Generalizable Robot Learning. Zoey Chen, Zhao Mandi, Homanga Bharadhwaj, Mohit Sharma, S Song, Abhishek Gupta, Vikash Kumar. International Journal of Robotics Research (IJRR) 2024
- HOPMan: Towards generalizable zero-shot manipulation via translating human interaction plans. Homanga Bharadhwaj, {Abhinav Gupta*, Vikash Kumar*, Shubham Tulsiani*}.IEEE International Conference on Robotics and Automation (ICRA) 2024. IEEE ICRA Best Paper Award Finalist in Robot Manipulation
- RoboAgent: Generalization & efficiency in robot manipulation via semantic augmentations and action chunking. Homanga Bharadhwaj, Jay Vakil, Mohit Sharma, Abhinav Gupta, Shubham Tulsiani, Vikash Kumar. IEEE International Conference on Robotics & Automation (ICRA) 2024. Robot Learning Workshop - CoRL 2023 | Outstanding Presentation Award
- RoboHive: A Unified Framework for Robot Learning. Vikash Kumar, Rutav Shah, Gaoyue Zhou, Vincent Moens, Vittorio Caggiano, Abhishek Gupta, Aravind Rajeswaran. Advances in Neural Information Processing Systems (NeurIPS) 2023
- Open X-Embodiment: Robotic Learning Datasets and RT-X Models. Open X-Embodiment Collaboration. Conference of robot learning (CoRL) 2024. IEEE ICRA **Best Paper Award**
- D'Manus: All the Feels - a dexterous hand with large area sensing. Raunaq Bhirangi, Abigail DeFranco, Jacob Adkins, Carmel Majidi, Abhinav Gupta, Tess Hellebrekers, Vikash Kumar
- MoDem-V2: Visuo-Motor World Models for Real-World Robot Manipulation. Patrick Lancaster, Nicklas Hansen, Aravind Rajeswaran, Vikash Kumar. IEEE International Conference on Robotics and Automation (ICRA) 2024
- TorchRL: A data-driven decision-making library for PyTorch. Albert Bou, Matteo Bettini, S Dittert, Vikash Kumar, Shagun Sodhani, Xiaomeng Yang, Gianni De Fabritiis, Vincent Moens. International Conference on Machine Learning (ICML) 2024
- MyoDex: Generalizable Representations for Dexterous Physiological Manipulation. Vittorio Caggiano, Sudeep Dasari, Vikash Kumar. International Conference on Machine Learning (ICML) 2023
- LIV: Language-Image Representations and Rewards for Robotic Control. Jason Ma, Vikash Kumar, Amy Zhang, Osbert Bastani, Dinesh Jayaraman. International Conference on Machine Learning (ICML) 2023
- SAR: Generalization of Dexterity via Synergistic Action Representation. Cameron Berg, Vittorio Caggiano, Vikash Kumar. Proceedings of Robotics: Science and Systems (RSS) 2023
- ACT: Learning Fine-Grained Bimanual Manipulation with Low-Cost Hardware. Tony Zhao, Vikash Kumar, Sergey Levine, Chelsea Finn. Proceedings of Robotics: Science and Systems (RSS) 2023
- Visual Dexterity: In-hand Dexterous Manipulation from Depth. Tao Chen, Megha Tippur, Siyang Wu, Vikash Kumar, Edward Adelson, Pulkit Agrawal. Science Robotics 2023
- GenAug: Retargeting behaviors to unseen situations via Generative Augmentation. Zoey Chen, Sho Kiami, Abhishek Gupta, Vikash Kumar. Proceedings of Robotics: Science and Systems (RSS) 2023
- H2R: Zero-Shot Robot Manipulation from Passive Human Videos. Homanga Bharadhwaj, Abhinav Gupta, {Shubham Tulsiani*, Vikash Kumar*}. Pretraining for Robotics workshop at ICRA 2023
- Dexterous Manipulation from Images: Autonomous Real-World RL via Substep Guidance. K Xu, Z Hu, R Doshi, A Rovinsky, Vikash Kumar, Abhishek Gupta, Sergey Levine. International Conference on Robotics and Automation (ICRA) 2023
- MoDem: Accelerating Visual Model-Based Reinforcement Learning with Demonstrations. Nicklas Hansen, Yixin Lin, Hao Su, Xiaolong Wang, Vikash Kumar, Aravind Rajeswaran. International Conference on Learning Representations (ICLR) 2023
- Reboot: Reuse data for bootstrapping efficient, real-world, dexterous manipulation. Zheyuan Hu, Aaron Rovinsky, Jianlan Luo, Vikash Kumar, Abhishek Gupta, Sergey Levine. Conference on Robot Learning (CoRL), 2023
- Real World Offline Reinforcement Learning with Realistic Data Source. Gaoyue Zhou*, Liyiming Ke*, Siddhartha Srinivasa, Abhinav Gupta, Aravind Rajeswaran, Vikash Kumar. International Conference on Robotics and Automation (ICRA) 2023
- VIP: Towards Universal Visual Reward and Representation via Value-Implicit Pre-Training. J Ma, S Sodhani, D Jayaraman, O Bastani, {Vikash Kumar*, Amy Zhang*}. International Conference on Learning Representations (ICLR-Spotlight) 2023
- Learning Dexterous Manipulation from Exemplar Object Trajectories and Pre-Grasps. Sudeep Dasari, Abhinav Gupta, Vikash Kumar. International Conference on Robotics and Automation (ICRA) 2023
- CACTI: A Framework for Scalable Multi-Task Multi-Scene Visual Imitation Learning. Zhao Mandi, Homanga Bharadhwaj, Vincent Moens, Shuran Song, Aravind Rajeswaran, Vikash Kumar. Workshop on Pre-training Robot Learning, CORL 2022
- Translating Robot Skills: Learning Unsupervised Skill Correspondences Across Robots. T Shankar, Y Lin, A Rajeswaran, V Kumar, S Anderson, J Oh. International Conference on Machine Learning (ICML) 2022
- Cross-Domain Transfer via Semantic Skill Imitation. Karl Pertsch, Ruta Desai, Vikash Kumar, Franziska Meier, Joseph J. Lim, Dhruv Batra, Akshara Rai. Conference on Robot Learning (CoRL), 2022
- R3M: A Universal Visual Representation for Robot Manipulation. Suraj Nair, Aravind Rajeswaran, Vikash Kumar, Chelsea Finn, Abhinav Gupta. Conf. on Robot Learning (CoRL) 2022, **Best Paper Award**, Scaling Robot Learning Workshop ICRA'22
- Can Foundation Models Perform Zero-Shot Task Specification For Robot Manipulation? Yuchen Cui, Scott Niekum, Abhinav Gupta, Vikash Kumar and Aravind Rajeswaran. Learning for Decision and Control (L4DC) 2022. Best Paper Award finalist, Scaling Robot Learning Workshop Robotics Science and Systems RSS'22
- MyoSuite: A contact-rich simulation suite for musculoskeletal motor control. Vittorio Caggiano, Huawei Wang, Guillaume Durandau, Massimo Sartori, Vikash Kumar. Learning for Decision and Control (L4DC) 2022

- MyoSim: A contact-rich simulation suite for musculoskeletal motor control. Vittorio Caggiano, Huawei Wang, Guillaume Durandau, Massimo Sartori, Vikash Kumar. International Conference on Robotics and Automation (ICRA) 2022
- RB2: Robotic Manipulation Benchmarking with a Twist. S Dasari, J Wang, J Hong, S Bahl, Y Lin, A Wang, A Thankaraj, K Chahal, B Calli, S Gupta, D Held, L Pinto, D Pathak, Vikash Kumar, Abhinav Gupta. NeurIPS 2021
- RRL: Resnet as representation for Reinforcement Learning. Rutav Shah, Vikash Kumar. International Conference on Machine Learning (ICML) 2021
- Reset-Free Reinforcement Learning via Multi-Task Learning. Abhishek Gupta*, Justin Yu*, Tony Z. Zhao*, Vikash Kumar*, Aaron R., Kelvin Xu, Thomas Devlin, Sergey Levine. International Conference on Robotics and Automation (ICRA) 2021
- A Game Theoretic Perspective of Model-Based Reinforcement Learning. Aravind Rajeswaran, Igor Mordatch, Vikash Kumar. International Conference on Machine Learning (ICML) 2020
- Emergent Real-World Robotic Skills via Unsupervised Off-Policy Reinforcement Learning. Archit Sharma, Michael Ahn, Vikash Kumar, Sergey Levine, Karol Housman, Shane Gu. Robotics Science and Systems (RSS) 2020
- Time Reversal as Self-Supervision. Suraj Nair, Mohammad B., Chelsea Finn, Sergey Levine, Vikash Kumar. IEEE International Conference on Robotics and Automation (ICRA) 2020
- Dynamics-Aware Unsupervised Discovery of Skills. Archit Sharma, Shixiang Gu, Sergey Levine, Vikash Kumar, Karol Hausman. International Conference on Learning Representations (ICLR) 2020
- Ingredients of Real World Robotics Reinforcement Learning. Henry Zhu, Justin Yu, Dhruv Shah, Abhishek Gupta, Vikash Kumar, Sergey Levine. International Conference on Learning Representations (ICLR) 2020
- Benchmarking In-Hand Manipulation. Silvia Cruciani, Balakumar Sundaralingam, Kaiyu Hang, Vikash Kumar, Tucker Hermans, Danica Kragic. IEEE Robotics and Automation Letters (RAL) 2020
- Deep Dynamics Models for Learning Dexterous Manipulations. Anusha Nagabandi, Kurt Konolige, Sergey Levine, Vikash Kumar. Conference on Robot Learning (CoRL) 2019
- ROBEL: Robotics Benchmarks for Learning. Michael Ahn, Henry Zhu, Kristian Hartikainen, Hugo Ponte, Abhishek Gupta, Sergey Levine, Vikash Kumar. Conference on Robot Learning (CoRL) 2019
- Multi-Agent Manipulation via Locomotion using Hierarchical Sim2Real. Ofir Nachum, Michael Ahn, Hugo Ponte, Shane Gu, Vikash Kumar. Conference on Robot Learning (CoRL) 2019
- Relay Policy Learning: Solving Long-Horizon Tasks via Imitation and Reinforcement Learning. Abhishek Gupta, Vikash Kumar, Corey Lynch, Sergey Levine, Karol Hausman. Conference on Robot Learning (CoRL) 2019
- Learning Latent Plans from Play. Corey Lynch, Mohi Khansari, Ted Xiao, Vikash Kumar, Jonathan Tompson, Sergey Levine, Pierre Sermanet. Conference on Robot Learning (CoRL) 2019
- Dexterous Manipulation with Deep Reinforcement Learning: Efficient, General, and Low-Cost. Henry Zhu*, Abhishek Gupta*, Aravind Rajeswaran, Sergey L., Vikash Kumar. International Conference on Robotics and Automation (ICRA) 2019
- Learning Deep Visuo-motor Policies for Dexterous Hand Manipulation. Divye Jain, Andrew Li, Shivam Singhal, Aravind Rajeswaran, Vikash Kumar, Emanuel Todorov. International Conference on Robotics and Automation (ICRA) 2019
- Learning Complex Dexterous Manipulation with Deep Reinforcement Learning and Demonstrations. Rajeswaran A, Kumar V, Gupta A, Schulman J, Todorov E and Levine S. Robotics Science and Systems (RSS) 2019
- Divide-and-Conquer Reinforcement Learning. Ghosh D, Singh A, Rajeswaran A, Kumar V, Levine S. International Conference on Learning Representations (ICLR) 2018
- Variance Reduction for Policy Gradient with Action-Dependent Factorized Baselines. Wu C., Rajeswaran A., Duan Y., Kumar V, Bayen A, Kakade S, Mordatch I, Abbeel . International Conference on Learning Representations (ICLR) 2018
- Optimal Control with Learned Local Models: Application to Dexterous Manipulation. Kumar V, Todorov E, Levine S. **Best Manipulation Paper Award,** IEEE International Conference on Robotics and Automation (ICRA) 2016
- MuJoCo Haptix: A virtual reality system for hand manipulation. Kumar V, Todorov E. IEEE-RAS International Conference on Humanoid Robots (Humanoids) 2015
- Real-time behavior synthesis for dynamic hand manipulation. Kumar V, Tassa Y, Erez T, Todorov E. IEEE International Conference on Robotics and Automation (ICRA) 2014
- STAC: Simultaneous Tracking And Calibration. Wu T, Tassa Y, Kumar V, Movellan J, Todorov E. Humanoids 2013
- An integrated system for real time Model Predictive Control for humanoid robots. Erez T, Lowrey K, Kumar V, Kolev S, Todorov E. Humanoids 2013
- A low cost and modular, 20 dof anthropomorphic robotic hand: Design, Actuation and Modelling. Zhe X, Kumar V, Todorov E. IEEE-RAS International Conference on Humanoid Robots (Humanoids) 2013
- Synthesis of Complex Behaviors with Optimal Control. Todorov E, Tassa Y, Erez T, Mordatch I, Kulchenko P, Kumar V Computational and Systems Neuroscience (COSYNE) 2013
- Fast, strong and compliant pneumatic actuation for dexterous tendon-driven hands. Kumar V, Todorov E. IEEE International Conference on Robotics and Automation (ICRA) 2013
- Design of an anthropomorphic robotic finger system with biomimetic artificial joints. Zhe X, Kumar V, Matsuoka Y, Todorov E. IEEE International Conference on Biomedical Robotics and Bio mechatronics (BioRob) 2012
- Self and Mutual learning in Robotic Arm, based on Cognitive Systems. Kumar V, Patil C, Sachan S. (best paper award finalist) International Multi-Conference of Engineers and Computer Scientists 2010

References

- Dr. Sergey Levine, Assistant Professor, Dept. of Electrical Engineering & Computer Science, Univ. of California, Berkeley
- Dr. Emo Todorov, Associate Professor, Applied Mathematics, Computer Science & Engineering, Univ. of Washington, Seattle
- Dr. Pieter Abbeel, Professor, Department of Electrical Engineering & Computer Sciences, Univ. of California, Berkeley
- Dr. Dieter Fox, Professor, Paul G. Allen School of Computer Science & Engineering, Univ. of Washington, Seattle
- Dr. Abhinav Gupta, Associate Professor, The Robotics Institute, Carnegie Mellon University, Pittsburgh