Ashish Kumar

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WEBSITE `https://ashish-kmr.github.io/`

EDUCATION

Ph.D. in Computer Science (Aug 2017 - Present)
University of California, Berkeley

B. Tech. in Computer Science (CGPA: 9.84/10) (Jul 2011 - May 2015)
Indian Institute of Technology Jodhpur

WORK EXPERIENCE

Visiting Research Scientist (Feb 2020 - Aug 2020)
Facebook AI Research

Research Fellow (Jul 2015 - Aug 2017)
Microsoft Research India

Research Intern (May 2014 - Jul 2014)
Georgia Institute of Technology

PREPRINTS

A Zero-shot Adaptive Quadcopter Controller
Dingqi Zhang, Antonio Loquercio, Xiangyu Wu, **Ashish Kumar**, Jitendra Malik, Mark W. Mueller
arXiv 2022 (https://arxiv.org/abs/2209.09232) and *in submission*

Learning Vision from Proprioception for Walking
Antonio Loquercio*, **Ashish Kumar***, Jitendra Malik
In Submission to ICRA 2023

PUBLICATIONS

In-Hand Object Rotation via Rapid Motor Adaptation
Haozhi Qi*, **Ashish Kumar***, Roberto Calandra, Yi Ma, Jitendra Malik
Conference on Robot Learning (CoRL) 2022

Legged Locomotion in Challenging Terrains using Egocentric Vision
Ananye Agarwal, **Ashish Kumar***, Jitendra Malik^{+}, Deepak Pathak^{+}
Conference on Robot Learning (CoRL) 2022
Live Demo at CVPR 2022

Adapting Rapid Motor Adaptation for Bipedal Robots
Ashish Kumar*, Zhongyu Li*, Jun Zeng, Deepak Pathak, Koushil Sreenath, Jitendra Malik
Intelligent Robots and Systems (IROS) 2022

Coupling Vision and Proprioception for Legged Navigation
Zipeng Fu*, **Ashish Kumar***, Ananye Agarwal, Haozhi Qi, Jitendra Malik, Deepak Pathak
Computer Vision and Pattern Recognition (CVPR) 2022
Best Paper Award *at Multimodal Learning and Applications Workshop (CVPR) 2022*

Minimizing Energy Consumption Leads to the Emergence of Gaits in Legged Robots
Zipeng Fu, **Ashish Kumar**, Jitendra Malik, Deepak Pathak
Conference on Robot Learning (CoRL) 2021

RMA: Rapid Motor Adaptation for Legged Robots
Ashish Kumar, Zipeng Fu, Deepak Pathak, Jitendra Malik
Robotics: Science and Systems (RSS) 2021

Learning Navigation Subroutines from Egocentric Videos
Ashish Kumar, Saurabh Gupta, Jitendra Malik
Conference on Robot Learning (CoRL) 2019

Visual Memory for Robust Path Following
Ashish Kumar*, Saurabh Gupta*, David Fouhey, Sergey Levine, Jitendra Malik
Oral at *Neural Information Processing Systems (NeurIPS) 2018*

FastGRNN: A Fast, Accurate, Stable and Tiny Kilobyte Sized Gated Recurrent Neural Network
Aditya Kusupati, Manish Singh, Kush Bhatia, **Ashish Kumar**, Prateek Jain, Manik Varma
Neural Information Processing Systems (NeurIPS) 2018

Resource-efficient machine learning in 2 KB RAM for the Internet of Things
Ashish Kumar, Saurabh Goyal, Manik Varma
International Conference on Machine Learning (ICML) 2017

ProtoNN: Compressed and accurate kNN for resource-scarce devices
C. Gupta, A. Suggala, A. Gupta, H. Simhadri, B. Paranjape, **Ashish Kumar**, S. Goyal, R. Udupa, M. Varma and P. Jain
International Conference on Machine Learning (ICML) 2017

Patents

Resource-efficient Machine Learning 2021
Manik Varma, Ashish Kumar
US Patent 10,909,471

Press Coverage

RMA: Rapid Motor Adaptation for Legged Robots
National Geographic (June 2022 Edition), Washington Post, CBS TV, Wall Street Journal, TechCrunch, Forbes, CNET, TechXplore, L'ADN (France), Digitech News (Italy), CNBeta (China), Observador (Portugal), Beratakini (Malaysia), 3DNews (Russia), 15Min (Lithuania), GeekTime (Israel)

Learning Navigation Subroutines from Egocentric Videos
TechCrunch

Machine Learning in a few Kilobytes of RAM
Living Science, Microsoft Research Blog

Invited Talks

Learning to Walk via Rapid Adaptation

- Stanford: Vision and Learning Lab (May, 2022)
- UIUC: Vision Lab (May, 2022)
- MIT: Computational Sensorimotor Learning Seminar (Nov, 2021)
- UPenn: GRASP Lab Seminar (Sep, 2021)
- University of Washington: RAIVN Lab (Aug, 2021)
- UPenn: Kod*lab (July, 2021)

Visual Navigation

- UC Berkeley: Semi-autonomous Seminar Series (May, 2020)

The Edge of Machine Learning

- Microsoft Research, Redmond (November, 2017)
- Amazon Research, Palo Alto (Sept, 2017)
- Facebook AI Research, Menlo Park (Sept, 2017)
- Microsoft Research, Cambridge (April, 2017)
- Oxford University, UK (April, 2017)

Teaching Experience

CS280: Computer Vision Spring 2019
Graduate Student Instructor

CS194-26: Image Manipulation, Vision and Comp. Photo Spring 2020
Graduate Student Instructor

Make A Difference Foundation (NGO) Sept 2016 - May 2017
Education Support Volunteer

Service

Reviewer 2017 - Present
ICML, NeurIPS, CVPR, ICCV, ICRA, CoRL, ICLR

Graduate Admissions: UC Berkeley 2018