Karttikeya Mangalam

PhD Candidate in Computer Science

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http://karttikeya.github.io
https://github.com/karttikeya/
Google Scholar Link

Education

University Of California Berkeley, California, USA
Doctor of Philosophy in Computer Science — *Aug.'19 - Present*
Advisor: Prof. Jitendra Malik

Stanford University, California, USA [**Dropped Out**]
Masters in Computer Science with Distinction in Research — *Sept.'18 - Jun.'19*

Indian Institute of Technology, Kanpur, India
Major in Electrical Engineering with Minor in Machine Learning — *Aug.'14 - Jun.'18*
GPA: 9.5/10 (Seven Semesters)

Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland
Semester Exchange in Computer Science — *Sept.'17 - Feb.'18*
GPA: 5.8/6.0 (One Semester)

D.A.V. Public School, Bihar, India
All India Senior School Certificate Examination — *April 2012*
GPA: 10/10

Research Interests

Vision Transformers, Representation Learning, Long-Term Video Understanding & Reasoning, Computer Vision, Artificial Intelligence

Publications

* denotes equal contribution (co-first authors)

Google Scholar Link

Harshayu Girase*, Nakul Agarwal, Chiho Choi, **Karttikeya Mangalam***, "Latency Matters: Real-Time Action Transformer", *Computer Vision and Pattern Recognition 2023* (CVPR'23)

Karttikeya Mangalam, Haoqi Fan, Yanghao Li, Chao-Yuan Wu, Bo Xiong, Christoph Feichtenhofer, Jitendra Malik "Reversible Vision Transformers", *Computer Vision and Pattern Recognition 2022* (CVPR'22) [**Oral**]

Karttikeya Mangalam*, Yang An*, Harhsayu Girase, Jitendra Malik "From Goals, Waypoints & Paths To Long Term Human Trajectory Forecasting", *International Conference on Computer Vision 2021* (ICCV'21)

Karttikeya Mangalam, Harshayu Girase, Shreyas Agrawal, Kuan Hui Lee, Ehsan Adeli, Jitendra Malik, Adrien Gaidon "It Is Not the Journey but the Destination: Endpoint Conditioned Trajectory Prediction", *European Conference on Computer Vision 2020* (ECCV'20) [**Oral**]

Karttikeya Mangalam, Ehsan Adeli, Kuan-Hui Lee, Adrien Gaidon, Juan Carlos Niebles, 'Disentangling Human Dynamics for Pedestrian Locomotion Forecasting with Noisy Supervision", *IEEE Winter Conference on Applications of Computer Vision* (WACV'20) [**Oral**]

Haoqi Fan*, Bo Xiong*, **Karttikeya Mangalam***, Yanghao Li*, Zhicheng Yan, Jitendra Malik, Christoph Feichtenhofer* "Multiscale Vision Transformers", *International Conference on Computer Vision 2021* (ICCV'21)

Boyi Li*, Rodolfo Corona*, **Karttikeya Mangalam***, Catherine Chen, Daniel Flaherty, Serge Belongie, Kilian Q Weinberger, Jitendra Malik, Trevor Darrell, Dan Klein "Does unsupervised grammar induction need pixels?", *Submitted to the Association of Computational Lingustics 2023*

Sehoon Kim, **Karttikeya Mangalam**, Jitendra Malik, Michael W Mahoney, Amir Gholami, Kurt Keutzer "Big Little Transformer Decoder", *arXiv: 2302.07863*

Karttikeya Mangalam, Vinay Prabhu "Do deep neural networks learn shallow learnable examples first?", Workshop on Identifying and Understanding Deep Learning Phenomena, *International Conference on Machine Learning 2019* (ICML'19) [**Spotlight**], Baylearn 2019.

Karttikeya Mangalam, Tanaya Guha "Using Spontaneity of Speech to Improve Emotion Recognition", *International Speech Communication Association - Interspeech 2018* [**Oral**]

Karttikeya Mangalam, K S Venkatesh "Bitwise Operations of Cellular Automaton on Grayscale Images", *28th Irish Signals and Systems Conference* (ISSC'17) [Poster]

Chen Zhao, Shuming Liu, **Karttikeya Mangalam**, Bernard Ghanem, "Re2TAL: Rewiring Pretrained Video Backbones for Reversible Temporal Action Localization", *Computer Vision and Pattern Recognition 2023* (CVPR'23)

Yanghao Li*, Chao-Yuan Wu*, Haoqi Fan, **Karttikeya Mangalam**, Bo Xiong, Jitendra Malik, Christoph Feichtenhofer, "MViTv2: Improved Multiscale Vision Transformers for Classification and Detection", *Computer Vision and Pattern Recognition 2022* (CVPR'22)

Chao-Yuan Wu*, Yanghao Li*, **Karttikeya Mangalam**, Haoqi Fan, Bo Xiong, Jitendra Malik, Christoph Feichtenhofer, "MeMViT: Memory-Augmented Vision Transformer for Long-Term Video Recognition", *Computer Vision and Pattern Recognition 2022* (CVPR'22) [**Oral**]

Kristen Grauman, Ego4D Consortium (including **Karttikeya Mangalam**), Jitendra Malik, "Ego4D: Around the World in 3,000 Hours of Egocentric Video", *Computer Vision and Pattern Recognition 2022* (CVPR'22) [**Oral**]

Zhe Cao, Hangg Gao, **Karttikeya Mangalam**, Qi-Zhi Cai, Minh Vo, Jitendra Malik "3D Human Locomotion Prediction with indoor environments constraints"", *European Conference on Computer Vision 2020* (ECCV'20) [**Oral**]

Takuma Yagi, **Karttikeya Mangalam**, Ryo Yonetani, Yoichi Sato 'First-Person Human Trajectory Prediction", *Computer Vision and Pattern Recognition 2018* (CVPR'18) [**Spotlight**]

Roei Herzig, Elad Ben-Avraham, **Karttikeya Mangalam**, Amir Bar, Gal Chechik, Anna Rohrbach, Trevor Darrell, Amir Globerson, "MeMViT: Memory-Augmented Vision Transformer for Long-Term Video Recognition", *Computer Vision and Pattern Recognition 2022* (CVPR'22)

Harshayu Girase*, Haiming Gang*, Srikanth Malla, Jiachen Li, Akira Kanehara, **Karttikeya Mangalam**, Chiho Choi, "LOKI: Long Term and Key Intentions for Trajectory Prediction", *International Conference on Computer Vision 2021* (ICCV'21)

Sehoon Kim, Amir Gholami, Albert Shaw, Nicholas Lee, **Karttikeya Mangalam**, Jitendra Malik, Michael W Mahoney, Kurt Keutzer, "Squeezeformer: An Efficient Transformer for Automatic Speech Recognition", *Neurips 2022* [Poster]

Elad Ben-Avraham, Roei Herzig, **Karttikeya Mangalam**, Amir Bar, Anna Rohrbach, Leonid Karlinsky, Trevor Darrell, Amir Globerson, "Bringing Image Scene Structure to Video via Frame-Clip Consistency of Object Tokens", *Neurips 2022* [Poster]

Awards & Achievements

All India Rank 1 in National Science Talent Search Examination-2011 out of 500,000 students

Selected as an **Indian National Mathematical Olympiad Awardee**, awarded to only 30 students nationwide annually *'for demonstrating extraordinary talent in pre-college mathematics'*

Received **Summer Undergraduate Research Grant** for Excellence 2016 by IIT Kanpur
Received **Academic Excellence Award**, for 3 consecutive years (2015-17) at IIT Kanpur

1st State Rank in Regional Mathematics Olympiad-2013 out of 10,000 students
1st State Rank in 5th SOF International Mathematics Olympiad 2012
1st State Rank in both First & Second Round of NTSE-2010 out of 30,000 students
1st State Rank in National Level Science Talent Search Examination -2011

Top 1% Nationwide out of 37,000 enrolled in National Standard Examination in Physics
Top 1% Nationwide in National Standard Examination in Junior Science 2010
Top 1% Nationwide out of more than a million students in AISSCE 2014
99.97 percentile in Joint Entrance Examination (IIT-JEE) 2014 among 1.5 million students

Recipient of **Honda Young Engineer & Scientist's (Y-E-S) Fellowship** 2017, awarded to **14** undergraduates nationally *for appreciating their excellent undergraduate research work*

Received a grant of **$10,000** through the YES+ program for summer research internship

Selected as a National Talent Search awardee in 2010 bestowed by MHRD to **500 among over 300,000** students nationwide *to identify students with high intellect and academic talent*

Awarded UnifyID fellowship in Spring'19 to promote young researchers in Machine Learning.

Selected as a "**Rising star in AI** 2023" and invited for the *KAUST AI Symposium* in King Abdullah University of Science and Technology, Saudi Arabia held between February 19-23, 2023.

Patents & Copyrights

System and Method For Endpoint Conditioned Trajectory Prediction, **Karttikeya Mangalam** et al. *U.S. Pat. # 62/991, 207* Filed March 18, 2020 with Toyota Research Institute, CA

System and Method For Predicting The Movement of Pedestrians, **Karttikeya Mangalam** et al. *U.S. Pat. # 16/787, 523* Filed February 11, 2020 with Toyota Research Institute, CA

Goal Conditioned Scene Aware Social Trajectory Prediction, **Karttikeya Mangalam** et al. *IP-A-4194*, Filed December 3, 2019, with Stanford Vision Lab & Toyota Research Institute, CA

Voluntary Work & Teaching

Workshop Organizer
Professional Service

- Organized the Long-form Video Understanding Workshop at **CVPR 2021** and **CVPR 2022**, featuring talks from several leading vision researchers and a long-form video understanding challenge featuring two tracks on generic event boundary detection in untrimmed videos. Website Link

Conference Reviewer
Professional Service

- 22nd Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2019)
- IEEE Winter Conference on Applications of Computer Vision (WACV 2020)
- International Journal on Multimedia Tools and Applications, Springer (MTAP)
- International Conference on Medical Imaging with Deep Learning (MIDL 2020)
- 1st Workshop, Benchmark and Challenge on Human Trajectory & Pose Forecasting (ICCV 2021)
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022 & 2023
- **Outstanding reviewer** at European Conference on Computer Vision (ECCV) 2022