Dinesh Jayaraman

Education

July 2013 - present	Doctor of Philosophy Electrical and Computer Engineering, **UT Austin** Advisor: Prof. Kristen Grauman Thesis title: Embodied Learning for Visual Recognition
August 2011 - June 2013	Master of Science Electrical and Computer Engineering, **UT Austin** GPA: 3.9/4.0
August 2007 - June 2011	Bachelor of Technology Electrical Engineering, **IIT Madras**, India. Minor: Literature GPA: 9.19/10.00

Work Experience

January 2013 - Present	*Research Assistant at Computer Vision Laboratory,* **UT Austin** Research on embodied visual recognition, visual attribute learning and applications to zero-shot learning. | Advisor: Prof. Kristen Grauman
July 2014 - September 2014	*Visiting student researcher at* **UC Berkeley** Deep learning for geolocation by matching ground-level imagery with overhead satellite imagery. | Advisor: Prof. Alyosha Efros
June 2012 - August 2012	*Research internship at* **Intel Labs**, *Santa Clara* Designed methods for camera array rectification, and automatic refocusing of rectangular camera arrays to target moving objects in real-time video. | Advisor: Dr. Kalpana Seshadrinathan
August 2011 -December 2012	*Research Assistant at Laboratory for Image and Video Engineering,* **UT Austin** Perceptual image quality measurement, and design of computer vision algorithm robust to image distortion. | Advisor: Prof. Alan Bovik
May 2010 - July 2010	*Research internship at* **Marvell Semiconductors**, *Bangalore* Designed and implemented a novel method to assess the shakiness or "judder" of video at low frame rates | Advisor: Mr. Vipin Namboodiri

Research interests

Computer vision and machine learning, and applications in computational photography

Embodied learning approaches for visual recognition, deep learning for computer vision, active vision, unsupervised and self-supervised deep image representation learning, semantic visual attributes, multi-task and transfer learning, computational photography, and automatic visual quality analysis.

Academic honors and awards

November 2016	Best Application Paper Award at ACCV 2016, Taipei. The best paper presenting a computer vision application at the Asian Conference on Computer Vision.
October 2016	Oral paper presentation at ECCV 2016, Amsterdam. Top 1.8% of submissions at European Conference on Computer Vision.
July 2016	Graduate Dean's Prestigious Fellowship Supplement, UT Austin, 2016-17. For selected graduate students with prestigious external awards.
June 2016	Outstanding Reviewer Award at CVPR 2016, Las Vegas, Nevada. Awarded to 40 out of over 1100 reviewers for Computer Vision and Pattern Recognition.
June 2016	Oral spotlight presentation at CVPR, 2016, Las Vegas, Nevada. Top 9.7% of submissions at Computer Vision and Pattern Recognition.
April 2016	Samsung PhD Fellowship, 2016-17. 50K USD awarded to 5 PhD students in ECE/CS from top universities each year.
March 2016	Invited paper for IJCV Special Issue of Best Papers from ICCV 2015.
December 2015	Oral presentation at ICCV 2015, Santiago. Top 3.3% of submissions at International Conference on Computer Vision.
October 2014	NVIDIA Academic grant award, 2014. 2 Tesla K-40 GPUs to support my PhD research in deep learning.
June 2014	Oral presentation at CVPR 2014, Columbus, Ohio. Top 5.7% of submissions at Computer Vision and Pattern Recognition.
August 2011	MCD Fellowship, UT Austin, 2011-12. Microelectronics and Computer Development Fellowship awarded to select incoming students in UT ECE.
May 2011	Dr. Dilip Veeraraghavan Memorial Award, IIT Madras, 2011. For best cumulative performance in a Humanities Minor.
May 2011	K. Srinivasan and Indira Srinivasan Prize, IIT Madras, 2011. For best cumulative performance in Humanities and Social Sciences courses.
May 2009	Rajalakshmi Krishnamurthy English Prize, IIT Madras, 2011. For best performance in the third and fourth semesters in English course of B.Tech program (2011).
March 2009	OPJEMS National Award, O.P. Jindal group, 2009-10. 50 students nationwide in India, for academic and leadership excellence.
February 2009	Winning team member, Robocon India competition, 2009. National-level robotics competition for undergraduate students in India (52 teams nationwide). Subsequently represented India at the international competition in Tokyo, Japan, August 2009.
May 2008	Certificate of Merit, Dept. of Electrical Engineering, IIT Madras. For students with outstanding academic performance.
May 2007	First rank in Tamil Nadu state, and 36th in India, AIEEE 2007. Out of approximately 600,000 students in the All India Engineering Entrance Examination.
June 2007	All India Rank 161 in IIT-JEE 2007.

out of approximately 240,000 students in the Indian Institutes of Technology Joint Entrance Examination.

February 2007 — Top 1% of students in National Physics Olympiad, 2006-07.
Qualified to final stages of both Physics and Chemistry Olympiads 2006-07.

February 2006 — KVPY Fellowship, Tata Institute of Fundamental Research and Indian Institute of Science, 2006.
Kishore Vaigyanik Protsahan Yojana, awarded to fewer than 500 class 12 students in India for promise in scientific research.

March 2005 — NTSE scholarship, NCERT, Ministry of Education, Govt. of India, 2005.
Top 775 class 10 students nationwide in the National Talent Search Examination.

Invited and Conference Talks

March 2017 — "Embodied learning for visual recognition", Robotics Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA.

February 2017 — "Embodied learning for visual recognition", Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA.

February 2017 — "Embodied learning for visual recognition", Toyota Technological Institute, Chicago, Illinois, USA.

February 2017 — "Embodied learning for visual recognition", Stanford Computer Vision Lab, Stanford University, Palo Alto, California, USA.

February 2017 — "Embodied learning for visual recognition", Berkeley Artificial Intelligence Research Laboratory, The University of California at Berkeley, Berkeley, California, USA.

December 2016 — "Embodied learning for visual recognition", Image Processing and Computer Vision Lab, IIT Madras, Chennai, India.

October 2016 — "Look-ahead before you leap: end-to-end active recognition by forecasting the effect of motion", Oral presentation at European Conference on Computer Vision (ECCV), Amsterdam, the Netherlands.

June 2016 — "Slow and steady feature analysis", Oral spotlight presentation at Computer Vision and Pattern Recognition (CVPR), Las Vegas, Nevada, USA.

December 2015 — "Learning image representations tied to ego-motion", Oral presentation at International Conference on Computer Vision (ICCV), Santiago, Chile.

December 2015 — "Embodied learning of image representations from video", Image Processing and Computer Vision Lab, IIT Madras, Chennai, India.

December 2014 — "Zero-shot recognition and cross-view geolocation", Computer Vision group at Cornell Tech, New York City, New York, USA.

September 2014 — "Zero-shot recognition with unreliable attributes", Computer Vision group at UC Berkeley, Berkeley, California, USA.

June 2014 — "Decorrelating semantic visual attributes", Oral presentation at Computer Vision and Pattern Recognition (CVPR), Columbus, Ohio, USA.

Book Chapters and Journal Publications

- **Dinesh Jayaraman** and Kristen Grauman. Learning egomotion-tied image representations from unlabeled video, Invited Paper in IJCV 2017 Special Issue of Best Papers from ICCV 2015, 2017.
- **Dinesh Jayaraman**, Chao-Yeh Chen and Kristen Grauman, "Divide, share, and conquer: Multi-task attribute learning with selective sharing" (book chapter), Springer book on Visual Attributes (Editors: Rogerio Feris, Devi Parikh, Christoph H. Lampert), 2016.

Peer-reviewed Conference Publications

- Yu-Chuan Su, **Dinesh Jayaraman** and Kristen Grauman, "Pano2Vid: Automatic cinematography for watching 360-degree videos", Asian Conference on Computer Vision (ACCV), Taipei, November 2016 (Best Application Paper Award).
- Ruohan Gao, **Dinesh Jayaraman** and Kristen Grauman, "Object-Centric Representation Learning from Unlabeled Videos", Asian Conference on Computer Vision (ACCV), Taipei, November 2016 (poster, 30% acceptance rate).
- **Dinesh Jayaraman** and Kristen Grauman, "Look-ahead before you leap: active vision by forecasting the effect of motion", European Conference on Computer Vision (ECCV), Amsterdam, Netherlands, October 2016 (oral, 1.8% acceptance rate).
- **Dinesh Jayaraman** and Kristen Grauman, "Slow and steady feature analysis: higher order temporal coherence in video", Computer Vision and Pattern Recognition (CVPR), Las Vegas, USA, June 2016 (oral spotlight, 9.7% acceptance rate).
- **Dinesh Jayaraman** and Kristen Grauman, "Learning image representations tied to egomotion", International Conference on Computer Vision (ICCV), Santiago, Chile, Dec 2015 (oral, 3.3% acceptance rate).
- **Dinesh Jayaraman** and Kristen Grauman, "Zero-shot recognition with unreliable attributes", Neural and Information Processing Systems (NIPS), Montreal, Canada, Dec 2014 (poster, 25% acceptance rate).
- **Dinesh Jayaraman**, Fei Sha and Kristen Grauman, "Decorrelating semantic visual attributes by resisting the urge to share", Computer Vision and Pattern Recognition (CVPR), Columbus, USA, June 2014 (oral, 5.75% acceptance rate).
- **Dinesh Jayaraman**, Anish Mittal, Anush Moorthy and Alan Bovik, "Objective quality assessment of multiply distorted Images", Asilomar Conference on Signals and Systems, Asilomar Conference Grounds, California, USA, October 2012.

Peer-reviewed Workshop Papers and Abstracts

- **Dinesh Jayaraman** and Kristen Grauman, "Learning image representations from observer motions and interactions", Object Understanding and Interaction Workshop (OUI) at International Conference on Computer Vision (ICCV), 2015
- **Dinesh Jayaraman** and Kristen Grauman, "Zero-shot recognition with unreliable attributes", Language and Vision Workshop at Computer Vision and Pattern Recognition (CVPR), 2015
- **Dinesh Jayaraman**, Fei Sha and Kristen Grauman, "Decorrelating semantic visual attributes by resisting the urge to share", Parts and Attributes Workshop at European Conference on Computer Vision (ECCV), 2014.

Patents

- Dinesh Jayaraman, Oscar Nestares and Kalpana Seshadrinathan, "Techniques for improving focusing of camera arrays", US20140160246 A1, published June 2014.
- Dinesh Jayaraman, Tao Ma, Wei Sun, Oscar Nestares and Kalpana Seshadrinathan, "Techniques for rectification of camera arrays", US20140160319 A1, published June 2014.

Theses

- Dinesh Jayaraman, "Embodied Learning for Visual Recognition". PhD Thesis. Supervisor: Prof. Kristen Grauman, UT Austin. (in progress)
- Dinesh Jayaraman, "Modeling Natural and Distorted Image Statistics". Bachelors Thesis. Supervisor: Prof. R. Aravind, IIT Madras.

Professional Service

Organizer of:

- 1st Workshop on Action and Anticipation for Visual Learning, ECCV 2016.

Program Commitee Member for:

- European Conference on Computer Vision (ECCV) '16
- Computer Vision and Pattern Recognition (CVPR) '15,'16
- Egocentric Vision Workshop at CVPR '16
- International Conference on Computer Vision (ICCV) '15
- Neural and Information Processing Systems (NIPS) '15

Reviewer for:

- Transactions on Pattern Analysis and Machine Intelligence (TPAMI) '16, '17
- International Journal of Computer Vision (IJCV) '17
- Machine Vision and Applications (MVAP) '17
- Transactions in Image Processing (TIP) '16
- Asian Conference on Computer Vision (ACCV) '16
- International Conference on Machine Learning (ICML) '15

Teaching Experience

- Guest lecture on embodied visual learning, Robotics Portfolio Seminar Series, UT Austin, Fall'16.
- Class lectures and tutorials on introduction to deep learning with CNNs, CS381V Visual Recognition, UT Austin, Spring and Fall'16.
- Mentor for GLUE program (Graduates Linked with Undergraduates in Engineering - Women in Engineering program) - advised an undergraduate research project, UT Austin, Spring'15.

Non-academic honors and awards

- Athletics Team Captain, Indian Insitute of Technology Madras 2010-2011. Represented the college in intercollegiate track and field events and won several medals, particularly in the high jump and triple jump, over 2007-2011.