Deepti Ghadiyaram

39727 Fog Shrew Rd, Newark, CA 94560
Google Scholar
LinkedIn

Mobile: (512)-949-9169
Email: deeptigp9@gmail.com
Work authorization: Green card

Education

Ph.D in Computer Science — Aug. 2011 - Aug. 2017
University of Texas at Austin
Advisor: Prof. Alan Bovik

Bachelor of Technology (Hons.) in Computer Science — July 2005 - May 2009
International Institute Of Information Technology

Research Interests

Computer vision, machine learning, and visual perception.
Video and image understanding, Representation learning, Responsible and Explainable AI.

Positions Held

Fundamental AI Research (FAIR), Meta AI — Oct. 2017 - present
Senior Research Scientist

Google — May 2016 - Aug. 2016
Software Engineering Intern

Microsoft Research — May 2015 - Aug. 2015
Research Intern

Symphony Commerce — May 2013 - Aug. 2013
Software Developer Intern

LinkedIn — May 2012 - Aug. 2012
Software Engineer Intern

Laboratory for Image and Video Engineering, University of Texas at Austin — Jan. 2013 - Aug. 2017
Graduate Research Assistant and Assistant Director

Texas Advanced Computing Center, University of Texas at Austin — Sep. 2011 - Dec. 2012
Graduate Research Assistant

Awards and Achievements

- Recipient of the Distinguished alumni award of IIIT-Hyderabad in 2021.
- Second place in EPIC-Kitchens CVPR 2019 Action Recognition Challenge.
- Recipient of UT-Austin's Graduate Recruitment Fellowship offered to those who rank in the top 10% of all students by the Department of Computer Science for the academic years 2013-2016.
- Best paper finalist at Asilomar Conf. Signals, Systems, and Computers in 2014.
- Recipient of Grace Hopper Celebration Scholarship Grant for the academic year 2014.
- Recipient of the *MCD fellowship* offered by UT-Austin for the academic year 2013-14.
- Selected as one of the 90 young leaders across the globe for *Starting Bloc Fellowship* in 2013.
- Received a *one-of-a-kind* award for my community services both within and outside of IIIT in 2009.
- Selected as one of the 7 delegates from all over India to represent Indian Engineering by the **Ministry of Youth Affairs and Sports**, Gov. of India at Singapore as part of a cultural exchange program between India and Singapore, July 2008
- Included in the Dean's List, for the years 2005 - 2009 for excellence in academic performance in IIIT.
- One of the finalists for Google India Women in Engineering Award, 2008.

Mentoring

- **Internships:** Zhenheng Yang (Summer'18), Krishna Kumar Singh (Summer'19), Simon Vanderhende (Fall'21)
- **University collaborations:** Zhenqiang Ying, Haoran Niu, Maniratnam Mandal (UT-Austin, 2018 - 2021) Vikram Ramaswamy, Sing Yu Lin, Dora Zhao (Princeton, 2021-2022)
- **Career support:** Several junior women research engineers and scientists (Meta AI, 2018-2022, WiML, 2019 - present).

Selected Projects

Video content moderation (2018, Meta AI):

- Built and deployed a high-precision video action recognition system in Instagram to automatically moderate objectionable content like child pornography and gun violence 80% more than before.

Responsible Computer Vision (2019 - 2021, Meta AI):

- Led a company-wide effort to build fair and equitable computer vision algorithms; built stratified evaluation datasets; designed metrics and recognition systems which yield geographical-equity.
- Published a fairness evaluation playbook for the entire AI-org to measure and mitigate biases of several computer vision models; instrumental in bringing awareness about responsible AI.

Publications **(Updated list here)**

Book Chapters

- **D. Ghadiyaram**, T. Goodall, L. K. Choi, and A. C. Bovik, "Perceptual Image and Video Quality," *Encyc. Img. Proc.*
- L. K. Choi, T. Goodall, **D. Ghadiyaram**, and A. C. Bovik, "Perceptual Image Enhancement," *Encyc. Img. Proc.*

Patents

- A. Bovik, **D. Ghadiyaram**, and J. Pan, "Predicting a Viewer's Quality of Experience," US Patent 20,170,085,617, 2017.

Journals

- J. Kim, H. Zeng, **D. Ghadiyaram**, S. Lee, L. Zhang, and A.C. Bovik,"Deep Convolutional Neural Models for Picture Quality Prediction," *IEEE Sig. Proc. Magazine*, Nov. 2017.
- **D. Ghadiyaram**, J. Pan, and A. C. Bovik, "Learning a Continuous-Time Streaming Video QoE Model," *IEEE Trans. Image Proc.*, vol. 27, no. 5, pp 2257 - 2271, Jan. 2018.
- **D. Ghadiyaram**, J. Pan, and A. C. Bovik, "A Subjective and Objective Study of Stalling Events in Mobile Streaming Videos," *IEEE Trans. Circ. and Syst. for Video Tech.*, Oct. 2017.
- **D. Ghadiyaram**, J. Pan, A. C. Bovik, A. K. Moorthy, P. Panda, and K. C. Yang,"In-capture Mobile Video Distortions: A Study of Subjective Behavior and Objective Algorithms," *IEEE Trans. Circ. and Syst. for Video Tech.*, May 2017.
- D. Kundu, **D. Ghadiyaram**, A. C. Bovik, and B. L. Evans, "No-Reference Quality Assessment of High Dynamic Range Pictures," *IEEE Trans. Img. Proc.*, Mar. 2017.
- D. Kundu, **D. Ghadiyaram**, A. C. Bovik, and B. L. Evans, "Large-scale Crowdsourced Study for High Dynamic Range Pictures," *IEEE Trans. Img. Proc.*, vol. 26, no. 10, pp 4725-4740, June 2017.
- **D. Ghadiyaram** and A. C. Bovik, "Perceptual Quality Prediction on Authentically Distorted Images Using a Bag of Features Approach," *J. of Vision.* vol. 17, no. 32, Jan. 2017.
- **D. Ghadiyaram** and A. C. Bovik,"Massive Online Crowdsourced Study of Subjective and Objective Picture Quality," *IEEE Trans. Img. Proc.* vol. 25, no. 1, Jan. 2016.

Conference Proceedings

(* indicates joint authorship)

- S. Vandenhende, D. Mahajan, F. Radenovic, and **D. Ghadiyaram** "Making Heads or Tails: Towards Semantically Consistent Visual Counterfactuals," ECCV 2022.
- Z. Ying, **D Ghadiyaram**, and A Bovik, "Telepresence Video Quality Assessment," ECCV 2022
- A Duarte, S Palaskar, L Ventura, **D Ghadiyaram**,K. Haan, F. Metze, J. Torres, X. Giro-i-Nieto, "How2Sign: a large-scale multimodal dataset for continuous American sign language," CVPR 2021.
- Z. Ying, M. Mandal, **D Ghadiyaram***, and A Bovik, "Patch-VQ:'Patching Up the Video Quality Problem," CVPR 2021.
- K. K. Singh, D. Mahajan, K. Grauman, Y. J. Lee, M. Feiszli, and **D. Ghadiyaram**, "Don't Judge an Object by Its Context: Learning to Overcome Contextual Bias," CVPR 2020 (**Oral**).
- Z. Ying, H. Niu, P. Gupta, D. Mahajan, **D. Ghadiyaram***, and A. Bovik*,"From Patches to Pictures (PaQ-2-PiQ): Mapping the Perceptual Space of Picture Quality," CVPR 2020.
- X. Yan, I. Misra, A. Gupta, **D. Ghadiyaram***, and D. Mahajan*, "ClusterFit: Improving Generalization of Visual Representations," CVPR 2020.
- **D. Ghadiyaram**, M. Feiszli, D. Tran, X. Yan, H. Wang, and D. Mahajan, "Large-scale weakly-supervised pre-training for video action recognition," *CVPR*, Long Beach, June 16 - 20, 2019.
- Z. Yang, D. Mahajan, **D. Ghadiyaram**, R. Nevatia, V. Ramanathan, "Activity Driven Weakly Supervised Object Detection," *CVPR*, Long Beach, June 16 - 20, 2019.
- B. Xiong, Y. Kalantidis, **D. Ghadiyaram**, and K. Grauman, "Less is More: Learning Highlight Detection from Video Duration," *CVPR*, Long Beach, June 16 - 20, 2019.

- **D. Ghadiyaram**, C. Chen, S. Inguva, and A. Kokaram, "A No-Reference Video Quality Predictor for Compression and Scaling Artifacts," *IEEE Int. Conf. Image Proc.*, Beijing, Sept. 17-20, 2017.
- **D. Ghadiyaram** , J. Pan, A. C. Bovik, A. K. Moorthy, P. Panda, and K. C. Yang, "Subjective and Objective Quality Assessment of Mobile Videos with In-Capture Distortions," *Int. Conf. on Acoustics, Speech, and Sig. Proc.*, New Orleans, March 5-9th, 2017.
- D. Kundu, **D. Ghadiyaram**, A. C. Bovik, and B. L. Evans, "No-reference Image Quality Assessment for High Dynamic Range Images," *Proc. Asilomar Conf. on Sig., Syst. and Comput.,* Nov. 2016.
- **D. Ghadiyaram** and A. C. Bovik, "Scene Statistics of Authentically Distorted Images in Perceptually Relevant Color Spaces for Blind Image Quality Assessment," *IEEE Int. Conf. Image Proc.* , Sept. 2015.
- **D. Ghadiyaram**, J. Pan, and A. C. Bovik, "A time-varying subjective quality model for mobile streaming videos with stalling events," *In Proc. SPIE Optical Engg. + App.*, Aug. 2015.
- **D. Ghadiyaram** and A. C. Bovik, "Feature Maps Driven No-Reference Image Quality Prediction of Naturally Distorted Images," *In Proc. SPIE Conf. Human Vision and Electronic Imaging,* San Francisco, CA, Feb 9 - 12, 2015.
- **D. Ghadiyaram** and A. C. Bovik,"Blind Image Quality Assessment on Real Distorted Images using Deep Belief Nets," *IEEE Global Conf. on Signal and Information Proc.*, Atlanta, Dec. 2014.
- **D. Ghadiyaram**, A.C. Bovik, H. Yeganeh, R. Kordasiewicz, and M. Gallant, "Study of the effects of stalling events on the Quality of Experience of mobile streaming videos," *IEEE Global Conf. on Signal and Information Proc.*, Dec. 2014.
- **D. Ghadiyaram** and A. C. Bovik, "Crowdsourcing Study of Subjective Image Quality," *Asilomar Conf. Signals, Systems, and Computers*, Pacific Grove, CA, Nov 2 - 5, 2014.
- H. Yeganeh, R. Kordasiewicz, M. Gallant, **D. Ghadiyaram**, and A. C. Bovik, "Delivery quality score model for internet video," *IEEE Int. Conf. Image Proc.*, Paris, Oct 27 - 30, 2014.
- **D. Ghadiyaram** and A. C. Bovik,"Online Crowdsourcing of Subjective Quality Assessment of Images," *J. of Vision*, vol. 14, no. 10, 2014.
- **D. Ghadiyaram**, M. V. Borker, and J. Sivaswamy, "Impulse Noise Removal from Color Images with Hopfield Neural Network and Improved Vector Median Filter," *Indian Conference on Computer Vision Graphics & Image Processing, 2008.*

Technical Reports

- **D. Ghadiyaram**, N. Joshi, and A. Kapoor, "Selectively Deep Neural Networks at Runtime," Technical Report, 2016.

Thesis

- **D. Ghadiyaram**, "Perceptual Quality Assessment of Images and Videos In the Wild," PhD Thesis. Supervisor: Prof. Alan Bovik, UT Austin, 2017.

Professional Service Activity

Program Chair

- Neural and Information Processing Systems (NeurIPS)'22, Datasets and Benchmarks track.

Organizer

- Responsible Computer Vision, European Conference on Computer Vision (ECCV'22).
- XAI4CV: Explainable Artificial Intelligence for Computer Vision, Conference on Computer Vision and Pattern Recognition (CVPR'22).
- Responsible Computer Vision, Conference on Computer Vision and Pattern Recognition (CVPR'21).

Session Chair

- Chaired featured papers panel at Neural and Information Processing Systems (NeurIPS)'22.

Program Committee Member

- Association for the Advancement of Artificial Intelligence (AAAI) Conference on Artificial Intelligence, '20, '21.

Area Chair

- Women in Machine Learning (WiML) Workshop at NeurIPS, '20, '21.
- Conference on Computer Vision and Pattern Recognition, '21.
- Association for the Advancement of Artificial Intelligence (AAAI) Conference on Artificial Intelligence, '22.

Journal Reviewer

- IEEE Transactions of Image Processing, '13,'14,'15,'16,'17,'18,'19.
- IEEE Transactions. on Multimedia, '16,'17,'18,'19.
- Electronics Letters, '16,'17,'18,'19.
- IEEE Transactions on Circuits and Systems for Video Technology, '15,'16,'17,'18,'19.
- Digital Signal Processing, '15,'16,'17,'18,'19.
- EURASIP Journal on Image and Video Processing, '15,'16,'17,'18,'19.
- IEEE Journal of Selected Topics in Signal Processing, '15,'16,'17,'18,'19.

Conference Reviewer

- Conference on Computer Vision and Pattern Recognition (CVPR), '20, '22, '23.
- Neural and Information Processing Systems (NeurIPS), '22.
- European Conference on Computer Vision (ECCV), '22.
- Association for the Advancement of Artificial Intelligence (AAAI) Conference on Artificial Intelligence, '20, '22.
- The Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), '14, '17, '18, '19,'20,'21, '22, '23.
- Women in Machine Learning Workshop, '19, '20, '21, '22.
- ACM SIGGRAPH, '17.

Invited and Conference Talks

- "Future of Computer Vision Datasets," Invited speaker at CVPR 2021.
- "Learning Generalized Visual Representations at Facebook," Invited talk at NeurIPS, Dec. 2020.
- "Don't Judge an Object by its Context: Learning to Overcome Contextual Bias," Oral Presentation at CVPR, June 2020.
- "Large-scale weakly-supervised pre-training for Video Action Recognition," Invited talk at EPIC-Kitchens Action Recognition Challenge, CVPR, Long Beach, June 2019.
- "Less is more: Learning Highlight Detection from Video Duration," Invited talk at Learning from Unlabeled Videos, CVPR, Long Beach, June 2019.
- "From Visual Recognition to Reasoning at Facebook," presented at F8, an annual developer conference attended by 5000 researchers, developers, and entrepreneurs world-wide, May 2019.
- "Feature maps driven no-reference image quality prediction of authentically distorted images," Oral presentation at Human Vision and Electronic Imaging, San Francisco, Feb. 2015.
- "Crowdsourced study of subjective image quality," Oral presentation at Asilomar Conference on Signals, Systems and Computers, California, Nov. 2014.