

# ANKAN BANSAL

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## CURRENT RESEARCH INTERESTS

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Multi-modal Learning, Scene Understanding, Vision and Language

## EDUCATION

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**Doctorate (PhD), Electrical and Computer Engineering** *July 2020*

University of Maryland, College Park, MD, USA

**Advisor:** Rama Chellappa

**Master of Science (MS), Electrical and Computer Engineering** *July 2019*

University of Maryland, College Park, MD, USA

**Advisor:** Rama Chellappa

**Master of Technology (M.Tech.), Electrical Engineering** *June 2015*

Indian Institute of Technology, Kanpur, India

**Bachelor of Technology (B.Tech.), Electrical Engineering** *June 2015*

Indian Institute of Technology, Kanpur, India

## SELECTED PUBLICATIONS

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### **Pose and Joint-Aware Action Recognition**

Anshul Shah, Shlok Mishra, *Ankan Bansal*, Jun-Cheng Chen, Rama Chellappa, Abhinav Shrivastava  
Under Submission

### **Visual Question Answering on Image Sets**

*Ankan Bansal*, Yuting Zhang, Rama Chellappa  
European Conference on Computer Vision (ECCV), 2020 (accepted)

### **Spatial Priming for Detecting Human-Object Interactions**

*Ankan Bansal*, Sai Saketh Rambhatla, Abhinav Shrivastava, Rama Chellappa  
Arxiv pre-print [arxiv:2004.04851](https://arxiv.org/abs/2004.04851)

### **Suppressing Texture to Build Better Shape Representations**

Shlok Mishra, Anshul Shah, *Ankan Bansal*, Jonghyun Choi, Abhinav Shrivastava, Abhishek Sharma, David Jacobs  
Under Submission

### **Face Recognition from Still Images and Video**

*Ankan Bansal*, Jingxiao Zheng, Rama Chellappa  
Encyclopedia of Cryptography, Security and Privacy, 2020

### **Deep CNN-Based Face Recognition**

*Ankan Bansal*, Rajeev Ranjan, Carlos D Castillo, Rama Chellappa  
Computer Vision: A Reference Guide, Springer International Publishing, Cham, 2020

### **How are attributes expressed in face DCNNs?**

Prithviraj Dhar, *Ankan Bansal*, Carlos D. Castillo, Joshua Gleason, P. Jonathon Phillips, Rama Chellappa  
IEEE International Conference on Automatic Face & Gesture Recognition (FG), 2020, [arXiv:1910.05657](https://arxiv.org/abs/1910.05657)

### **Detecting Human-Object Interactions via Functional Generalization**

*Ankan Bansal*, Sai Saketh Rambhatla, Abhinav Shrivastava, Rama Chellappa  
Thirty-Fourth AAAI Conference on Artificial Intelligence, 2020, [arXiv:1904.03181](https://arxiv.org/abs/1904.03181)

### **A Fast and Accurate System for Face Detection, Identification, and Verification**

Rajeev Ranjan, *Ankan Bansal*, Jingxiao Zheng, Hongyu Xu, Joshua Gleason, Boyu Lu, Anirudh Nanduri, Jun-Cheng Chen, Carlos D. Castillo, Rama Chellappa  
IEEE Transactions on Biometrics, Behavior, and Identity Science (T-BIOM), 2019, [arXiv:1809.07586](https://arxiv.org/abs/1809.07586)

## Zero-Shot Object Detection

Ankan Bansal, Karan Sikka, Gaurav Sharma, Rama Chellappa, Ajay Divakaran  
European Conference on Computer Vision (ECCV), 2018, [link](#)

## Crystal Loss and Quality Pooling for Unconstrained Face Verification and Recognition

Rajeev Ranjan, Ankan Bansal, Hongyu Xu, Swami Sankaranarayanan, Jun-Cheng Chen, Carlos D Castillo, Rama Chellappa  
Pre-print, [arXiv:1804.01159](#)

## Deep Features for Recognizing Disguised Faces in the Wild

Ankan Bansal, Rajeev Ranjan, Carlos D. Castillo, Rama Chellappa  
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2018, [link](#)

## Predicting Dynamical Evolution of Human Activities from a Single Image

Suhas Lohit, Ankan Bansal, Nitesh Schroff, Jaishanker Pillai, Pavan Turaga, Rama Chellappa  
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2018, [link](#)

## Proximity-Aware Hierarchical Clustering of Unconstrained Faces

Wei-An Lin, Jun-Cheng Chen, Rajeev Ranjan, Ankan Bansal, Swami Sankaranarayanan, Carlos D. Castillo, Rama Chellappa  
Image and Vision Computing (IVC), 2018

## UPSET and ANGRI: Breaking High Performance Image Classifiers

Sayantana Sarkar, Ankan Bansal, Upal Mahbub, Rama Chellappa  
Pre-print, [arXiv:1707.01159](#)

## Deep Learning for Understanding Faces

Rajeev Ranjan, Swami Sankaranarayanan, Ankan Bansal, Navaneeth Bodla, Jun-Cheng Chen, Vishal M. Patel, Carlos D. Castillo, Rama Chellappa  
IEEE Signal Processing Magazine, 2017, [link](#)

## The Do's and Don'ts for CNN-based Face Verification

Ankan Bansal, Carlos Castillo, Rajeev Ranjan, Rama Chellappa  
International Conference on Computer Vision (ICCV) Workshops, 2017, [arXiv:1705.07426](#)

## UMDFaces: An Annotated Face Dataset for Training Deep Networks

Ankan Bansal, Anirudh Nanduri, Carlos Castillo, Rajeev Ranjan, Rama Chellappa  
International Joint Conference on Biometrics (IJCB), 2017, [arXiv:1611.01484](#)

## People Counting in High Density Crowds from Still Images

Ankan Bansal, K. S. Venkatesh  
International Journal of Computer and Electrical Engineering, 2015 Vol. 7(5), [arXiv:1507.08445](#)

## Generation of Future Image Frames for an Image Sequence

Nishchal K Verma, Ankan Bansal, Shikha Singh  
International Conference on Intelligent Interactive Technologies and Multimedia, 2013

## INTERNSHIPS

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### Salesforce Einstein AI, Palo Alto, USA

Advisors: Nikhil Naik, Richard Socher

*September 2019 - November 2019*

**Topic:** Grounding Visual Concepts

### Amazon AWS AI, Pasadena, USA

Advisors: Yuting Zhang, Vijay Mahadevan, Stefano Soatto

*May 2019 - August 2019*

**Topic:** Visual Question Answering

### Amazon AWS Deep Learning, Seattle, USA

Advisors: Joaquin Zepeda, Avinash Ravichandran, Stefano Soatto

*May 2018 - August 2018*

**Topic:** Semi-supervised Learning

### SRI International, Princeton, USA

Advisor: Ajay Divakaran

*May 2017 - August 2017*

**Topic:** Zero-shot Learning

### Czech Technical University, Prague, Czech Republic

Advisor: Jiří Matas

*May 2013 - July 2013*

**Topic:** Detecting Texture-less 3-D Objects

**Indian Institute of Technology, Kanpur, India**

**Advisor:** Nishchal K. Verma

*May 2012 - July 2012*

**Topic:** Future Frame Prediction

## HONORS AND AWARDS

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- Jacob K. Goldhaber Travel Grant, University of Maryland, 2017
- Clark School of Engineering Distinguished Graduate Fellowship, University of Maryland, 2015-2016
- MCM Scholarship, IIT Kanpur, 2010-2014
- National Talent Search Examination (NTSE) scholarship by Government of India, 2008-2010
- CBSE Certificate of Outstanding Academic Performance (top 0.1% in Mathematics), 2008.
- Amul Vidya Bhushan Award for performance in Central Board Higher Secondary Examination, 2008
- Science Student Award by State Government of Uttar Pradesh, 2008
- Certificate of merit in the All India Talent Search Examination (AITSE), 2007.

## RELEVANT COURSES

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Computer Vision, Deep Learning, Robotics and Perception

Statistical Pattern Classification, Random Processes, Estimation & Detection Theory, Information Theory, Convex Optimization, Kalman Filtering

## SKILLS

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**Programming Languages and Libraries:** Python, PyTorch, Tensorflow, Caffe

**Human Languages:** Hindi (native), English, Spanish (beginner), Russian (beginner)

## SERVICE

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**Reviewer** for vision conferences (CVPR, ICCV, AAAI, etc.), and journals (IJCV, TIP, T-BIOM, etc.)

**Coordinator, Quiz Events**, Antaragni 2012 (inter-collegiate cultural festival of IIT Kanpur)

**Coordinator, Crypto**, Techkriti 2012 (inter-collegiate technical festival of IIT Kanpur)

**Student Guide and Link Student**, Counselling Service, IIT Kanpur, 2011-2012

## OTHER INTERESTS

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I [read](#). I [write](#). I [quiz](#).