

Subhransu Maji

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My research focuses on *computer vision & machine learning* to enable robust and adaptable sensing of the world around us. I also collaborate with domain experts to develop novel applications of computer vision.

Education

- **PhD** in Computer Science, EECS Department, University of California, Berkeley 2006 – 2011
Thesis: Algorithms and Representations for Visual Recognition
Advisor: Jitendra Malik
- **Bachelor of Technology (BTech)** in Computer Science and Engineering 2002 – 2006
Indian Institute of Technology, Kanpur, India.

Employment

- Visiting Faculty, **University of Amsterdam** 09/2021 – current
- Associate Professor, **University of Massachusetts, Amherst** (*on sabbatical till 8/22*) 09/2020 – current
- Assistant Professor, **University of Massachusetts, Amherst** 09/2014 – 9/2020
- Amazon Scholar, **Amazon Web Services** (part time) 2018 – 2021
- Consulting, **Google Research**, Cambridge, MA (part time) 2016 – 2017
- Research Assistant Professor, **Toyota Technological Institute at Chicago** 01/2012 – 08/2014
- Visiting Researcher, **University of Oxford (VGG group)** 8/2013 – 10/2013
- Senior Member, **Center of Language and Speech Processing**, Johns Hopkins University 2012
- Intern, **Google**, Mountain View, 2008 (Host: Chuck Rosenberg) 2018
- Intern, **Microsoft Research India** 2010
- Intern, **LEAR group, INRIA Rhone Alpes** (Host: Prof. Cordelia Schmidt) 2005

Selected awards and fellowships

- 2020 CICS Dean's Faculty Fellowship
- 2018 National Science Foundation CAREER Award
- 2018 Best paper honorable mention, CVPR 2018
- 2015 Best paper award, WACV 2015
- 2009 Google Graduate Fellowship
- 2006 Medal for graduating with the highest GPA in the CSE Department, IIT Kanpur
- 2002-06 Pratibha scholarship from Andhra Pradesh Govt., India
- 2005 Rajaraman scholarship for academic proficiency, IIT Kanpur
- 2002-04 Academic excellence award, IIT Kanpur, 2002, 2003, 2004

Funding

1. Climate Change AI Innovation Grant: Duration: 2/22-3/23, Award: \$80,000 (PIs: Subhansu Maji, Peng Bai)
2. Collaborative Research: MRA: Insectivore Response to Environmental Change, National Science Foundation #2017756, Duration: 12/20 - 11/23, Award: \$344,914.00 (PIs: Daniel Sheldon, Subhansu Maji)
3. 3D Shape Understanding and Generation using Unstructured Point Clouds, National Science Foundation #1908669, Duration: 9/19 - 8/22, Award: \$499,894 (PIs: Rui Wang, Subhansu Maji)
4. CDS&E: Machine Learning for Star Cluster Classification, National Science Foundation #1815267, Duration: 11/18 - 10/20, Award: \$ 251,741 (PIs: Daniela Calzetti, Subhansu Maji)
5. CAREER: Towards Perceptual Agents That See and Reason Like Humans, National Science Foundation #1749833, Duration: 6/18 - 5/23, Award: \$545,586 (PI: Subhansu Maji)
6. Collaborative Research: ABI Innovation: Dark Ecology: Deep Learning and Massive Gaussian Processes to Uncover Biological Signals in Weather Radar, National Science Foundation, #1661259, Duration: 5/17 - 4/20, Award: \$903,339 (PIs: Dan Sheldon, Subhansu Maji)
7. Texture2Text: Rich Language-Based Understanding of Textures for Recognition and Synthesis, National Science Foundation #1617917, Duration: 9/16 - 8/19, Award: \$450,000 (PI: Subhansu Maji)
8. Faculty awards from Adobe Research (2018-2022), \$55,000
9. Faculty award from Facebook AI Research (2016), \$50,000
10. GPUs via NVIDIA Academic Hardware Donation Program (2013, 2015)

Professional activities

Tutorials and workshops co-organizing

- *Workshop* on “Fine-Grained Visual Classification (FGVC⁹)”, CVPR 2023 (scheduled)
- *Workshop* on “Fine-Grained Visual Classification (FGVC⁸)”, CVPR 2022
- *Workshop* on “Fine-Grained Visual Classification (FGVC⁶)”, CVPR 2020
- *Workshop* on “Fine-Grained Visual Classification (FGVC⁶)”, CVPR 2019
- *Workshop* on “Fine-Grained Visual Classification (FGVC⁵)”, CVPR 2018
- *Workshop* on “Fine-Grained Visual Classification (FGVC⁴)”, CVPR 2017
- *Workshop* on “Fine-Grained Visual Classification (FGVC³)”, CVPR 2015
- Co-founder and co-organizer of the “New England Vision Meeting”, 2015 (75+ attendees from various universities in the New England area: <http://people.cs.umass.edu/~smaji/nevm2015>)
- *Workshop* on “Computer Vision and Human Computation”, CVPR 2014

- *Workshop* at the CLSP center, Johns Hopkins university, *Towards a Detailed Understanding of Objects and Scenes in Natural Images*, June - August, 2012. In collaboration with Andrea Vedaldi, Esa Rahtu, Matthew Blaschko, Iasonas Kokkinos, and Ben Taskar. <http://www.clsp.jhu.edu/workshops/archive/ws-12/groups/tduosn>
- *Tutorial* on “Computational Visual Recognition” at ICVGIP 2012, IIT Bombay <http://www.cse.iitb.ac.in/graphics/icvgip2012/tutorials.php>
- *Tutorial* on “Additive Kernels and Explicit Embeddings for Large-Scale Computer Vision Problems”, ECCV 2012, Florence, Italy

External service

- Program chair, ICVGIP 2021
- Area chair, IEEE Computer Vision and Pattern Recognition (CVPR), 2016, 2018, 2019, 2020, 2021, 2022
- Area chair, International Conference on Computer (ICCV), 2021
- Area chair, European Conference on Computer Vision (ECCV), 2020, 2022
- Panelist, National Science Foundation (IIS), 2020
- Associate editor, International Journal for Computer Vision (IJCV), 2019-current
- Panelist, National Science Foundation (IIS), 2019
- Senior Program Committee, International Joint Conference on Artificial Intelligence (IJCAI), 2019
- Area chair, International Conference on Computer Vision, Graphics and Image Processing, 2018
- Panelist, National Science Foundation (IIS), 2017
- Area and tutorial chair, International Conference on Computer Vision, Graphics and Image Processing, 2016
- Panelist, National Science Foundation (IIS), 2016
- Panelist, National Science Foundation (NRI), 2016
- Area chair, IEEE Computer Vision and Pattern Recognition (CVPR), 2016
- Area chair, International Conference on Computer Vision, Graphics and Image Processing, 2014
- Reviewer for the following international conferences:
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2009 – 2017
 - European Conference on Computer Vision (ECCV) 2010 – 2019
 - International Conference on Computer Vision (ICCV) 2009 – 2019
 - Conference on Neural Information Processing Systems (NIPS) 2010 – 2017 (several years)
 - Association for the Advancement of Artificial Intelligence (AAAI) 2012
 - International Conference on Machine Learning (ICML) 2012, 2013
 - Asian Conference on Computer Vision (ACCV) 2018
- Reviewer for the following international journals:
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
 - International Journal of Computer Vision (IJCV)

- Computer Vision and Image Understanding (CVIU)
- IEEE Transactions on Image Processing (IP)
- I have also been in the program committee member for various workshops organized at conferences including ECCV, CVPR and ICCV in the past several years.

Service within CICS, UMass

- Faculty mentor, Data science for common good (DS4CG)
- CARE committee (member, and co-chaired the PhD student mentoring committee, AY 20-21)
- Data science faculty hiring committee (chair AY 19-20, member 15-16, 21-22)
- Faculty hiring committee (member, AY 18-19)
- Budget & Executive committee (member)
- Annual Faculty Review (AFR) committee (member)
- MS Admissions committee (member)
- Faculty awards committee (member)
- Graduate program committee (member)
- Distinguished Lecture Series (coordinator)

Publications

Conferences are the primary venue for publications in Computer Science and conferences such as CVPR, ICCV and NeurIPS have the highest impact factors. My publications have been cited 16,096 times (h-index 41; i10-index 66) according to Google scholar as of Feb 22: <https://scholar.google.com/citations?user=17Qx0zAAAAAJ>

Journals

1. **On Measuring and Controlling the Spectral Bias of the Deep Image Prior**, Zengling Shi, Pascal Mettes, Subhansu Maji, Cees GM Snoek, International Journal of Computer Vision (IJCV), Jan 2022
2. **StarNet: Machine Learning for Star Cluster Classification**, Gustavo Perez, Matteo Messa, Daniela Calzetti, Subhansu Maji, Dooseok Jung, Angela Adamo, Mattia Sirressi, The Astrophysical Journal (ApJ), 2021
3. **Neural Shape Parsers for Constructive Solid Geometry**, Gopal Sharma, Rishabh Goyal, Difan Liu, Evangelos Kalogerakis, Subhansu Maji, IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), December 2020
4. **Inferring 3D Shapes from Image Collections Using Adversarial Networks**, Matheus Gadelha, Aartika Rai, Subhansu Maji, Rui Wang, International Journal of Computer Vision (IJCV), 2020
5. **Phenology of Nocturnal Avian Migration has Shifted at the Continental Scale**, Kyle G. Horton, Frank A. La Sorte, Daniel Sheldon, Tsung-Yu Lin, Kevin Winner, Garrett Bernstein, Subhansu Maji, Wesley M. Hochachka, Andrew Farnsworth, Nature Climate Change, December 2019

6. **MistNet: Measuring Historical Bird Migration in the US using archived Weather RADAR Data and Convolutional Neural Networks**, Tsung-Yu Lin, Kevin Winner, Garrett Bernstein, Abhay Mittal, Adriaan M. Dokter, Kyle G. Horton, Cecilia Nilsson, Benjamin M. Van Doren, Andrew Farnsworth, Frank A. La Sorte, Subhransu Maji, Daniel Sheldon, *Methods in Ecology and Evolution*, August 2019
7. **High Dimensional Inference with Random Maximum A-Posteriori Perturbations**, *Tamir Hazan, Francesco Orabona, Anand D. Sarwate, Subhransu Maji, Tommi Jaakkola*, *IEEE Transactions on Information Theory* 65, 2019.
8. **Bilinear CNNs for Fine-grained Visual Recognition** *Tsung-Yu Lin, Aruni RoyChowdhury, Subhransu Maji*, *IEEE Transactions of Pattern Analysis and Machine Intelligence (PAMI)*, Volume: 40 , Issue: 6 , June 2018
9. **Deep Filter Banks for Texture Recognition, Description, and Segmentation**, *Mircea Cimpoi, Subhransu Maji, Iasonas Kokkinos, Andrea Vedaldi*, *International Journal of Computer Vision*, Volume 118, Issue 1, pp 65-94, May 2016
10. **Part and Attribute Discovery from Relative Annotations**, *Subhransu Maji, Gregory Shakhnarovich*, *International Journal of Computer Vision*, May 2014, Volume 108, Issue 1-2, pp 82-96
11. **Efficient Classification for Additive Kernel SVMs** *Subhransu Maji, Alexander C. Berg, Jitendra Malik*, *IEEE Transactions of Pattern Analysis and Machine Intelligence (PAMI)*, Volume 35 Issue 1, Jan 2013
12. **Poselets: A Distributed Representation for Visual Recognition** *Lubomir Bourdev, Subhransu Maji, Jitendra Malik*, *Journal of Vision*, September, 23, 2011, vol. 11 no. 11 article 891

Refereed conferences

1. **GANorCON: Are Generative Models useful for Few-shot Segmantic Segmentation?**, Oindrilla Saha, Zezhou Cheng, Subhransu Maji, *Computer Vision and Pattern Recognition (CVPR)*, 2022
2. **Semi-Supervised Learning with Taxonomic Labels**, *Jong-Chyi Su, Subhransu Maji*, *British Machine Vision Conference (BMVC)*, 2021
3. **AI for Conservation: Learning to Track Birds with Radar**, *Zezhou Cheng, Subhransu Maji, Daniel Sheldon*, *XRDS: Crossroads, The ACM Magazine for Students*, 2021.
4. **Deep Manifold Prior**, *Matheus Gadelha, Rui Wang, Subhransu Maji*, *VIPriors Workshop (ICCV)*, 2021
5. **On Equivariant and Invariant Learning of Object Landmark Representations**, *Zezhou Cheng, Jong-Chyi Su, Subhransu Maji*, *International Conference on Computer Vision (ICCV)*, 2021
6. **Shot in the Dark: Few-Shot Learning with No Base-Class Labels**, *Zityan Chen, Subhransu Maji, Erik Learned-Miller*, *Learning from Limited or Imperfect Data (L2ID) Workshop, CVPR*, 2021
7. **A Realistic Evaluation of Semi-Supervised Learning for Fine-Grained Classification**, *Jong-Chyi Su, Zezhou Cheng, Subhransu Maji*, *Computer Vision and Pattern Recognition (CVPR)*, 2021
8. **Exponential Moving Average Normalization for Self-supervised and Semi-supervised Learning**, *Zhaowei Cai, Avinash Ravichandran, Subhransu Maji, Charless Fowlkes, Zhouen Tu, Stefano Soatto*, *Computer Vision and Pattern Recognition (CVPR)*, 2021
9. **Exploring and Predicting Transferability across NLP Tasks**, *Tu Vu, Tong Wang, Tsendsuren Munkhdalai, Alessandro Sordani, Adam Trischler, Andrew Mattarella-Micke, Subhransu Maji, Mohit Iyyer*, *EMLNP 2020*
10. **Label-Efficient Learning on Point Clouds using Approximate Convex Decompositions**, *Matheus Gadelha*, Aruni RoyChowdhury*, Gopal Sharma, Evangelos Kalogerakis, Liangliang Cao, Erik Learned-Miller, Rui Wang, Subhransu Maji*, *European Conference on Computer Vision (ECCV)*, 2020

11. **ParSeNet: A Parametric Surface Fitting Network for 3D Point Clouds**, Gopal Sharma, Difan Liu, Subhransu Maji, Evangelos Kalogerakis, Siddhartha Chaudhuri, Radomír Měch, European Conference on Computer Vision (ECCV), 2020
12. **When Does Self-Supervision Improve Few-Shot Learning?**, Jong-Chyi Su, Subhransu Maji, Bharath Hariharan, European Conference on Computer Vision (ECCV), 2020
13. **Describing Textures using Natural Language**, Chenyun Wu, Mikayla Timm, Subhransu Maji, European Conference on Computer Vision (ECCV), 2020, **oral**
14. **PhraseCut: Language-based Image Segmentation in the Wild**, Chenyun Wu, Trung Bai, Scott Cohen, Zhe Lin, Subhransu Maji, Conference on Computer Vision and Pattern Recognition (CVPR), 2020
15. **Learning Generative Models of Shape Handles**, Matheus Gadelha, Giorgio Gori, Duygu Ceylan, Radomir Mech, Nathan Carr, Tamy Boubekeur, Rui Wang, Subhransu Maji, Conference on Computer Vision and Pattern Recognition (CVPR), 2020
16. **Active Adversarial Domain Adaptation**, Jong-Chyi Su, Yi-Hsuan Tsai, Kihyuk Sohn, Buyu Liu, Subhransu Maji, Manmohan Chandraker, Winter Conference on Applications of Computer Vision (WACV), 2020
17. **Detecting and Tracking Communal Bird Roosts in Weather Radar Data**, Zezhou Cheng, Saadia Gabriel, Pankaj Bhambhani, Daniel Sheldon, Subhransu Maji, Andrew Laughlin, David Winkler, Association for the Advancement of Artificial Intelligence (AAAI), 2020 (Social Impact Track), **oral**
18. **W!NCE: Unobtrusive Sensing of Upper Facial Action Units with EOG-based Eyewear**, *Soha Rostaminia, Alexander Lamson, Subhransu Maji, Tauhidur Rahman, Deepak Ganesan*, Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UBICOMP), 2019
19. **DeepRoof: A Data-driven Approach For Solar Potential Estimation Using Rooftop Imagery**, *Stephen Lee, Srinivasan Iyengar, Menghong Feng, Prashant Shenoy, Subhransu Maji*, SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2019, **oral**
20. **A Bayesian Perspective on the Deep Image Prior**, *Zezhou Cheng, Matheus Gadelha, Subhransu Maji, Daniel Sheldon*, Computer Vision and Pattern Recognition (CVPR), 2019
21. **Meta-Learning with Differentiable Convex Optimization**, *Kwonjoon Lee, Subhransu Maji, Avinash Ravichandran, Stefano Soatto*, Computer Vision and Pattern Recognition (CVPR), 2019, **oral**
22. **Random Feature Maps for the Itemset Kernel**, *Kyohei Atarashi, Subhransu Maji, Satoshi Oyama*, Association for the Advancement of Artificial Intelligence (AAAI), 2019
23. **Multiresolution Tree Networks for 3D Point Cloud Processing**, *Matheus Gadelha, Rui Wang, Subhransu Maji*, European Conference on Computer Vision (ECCV), 2018
24. **Second-order Democratic Aggregation**, *Tsung-Yu Lin, Subhransu Maji, Piotr Koniusz*, European Conference on Computer Vision (ECCV), 2018
25. **VisemeNet: Audio-Driven Animator-Centric Speech Animation** *Yang Zhou, Zhan Xu, Chris Landreth, Evangelos Kalogerakis, Subhransu Maji, Karan Singh*, ACM Transactions on Graphics (also to be presented at SIGGRAPH 2018)
26. **CSGNet: Neural Shape Parser for Constructive Solid Geometry**, *Gopal Sharma, Rishabh Goyal, Difan Liu, Evangelos Kalogerakis, Subhransu Maji*, Computer Vision and Pattern Recognition (CVPR), 2018
27. **SPLATNet: Sparse Lattice Networks for Point Cloud Processing**, *Hang Su, Varun Jampani, Deqing Sun, Subhransu Maji, Evangelos Kalogerakis, Ming-Hsuan Yang, Jan Kautz*, Computer Vision and Pattern Recognition (CVPR), 2018, **oral, best paper honorable mention**

28. **Reasoning about Fine-grained Attribute Phrases using Reference Games**, *Jong-Chyi Su**, *Chenyun Wu**, *Huaizu Jiang*, *Subhransu Maji*, International Conference on Computer Vision (ICCV), 2017
29. **3D Shape Reconstruction from Sketches via Multi-view Convolutional Networks**, *Zhaoliang Lun*, *Matheus Gadelha*, *Evangelos Kalogerakis*, *Subhransu Maji*, *Rui Wang*, International Conference on 3D Vision (3DV), 2017, **oral**
30. **3D Shape Induction from 2D Views of Multiple Objects**, *Matheus Gadelha*, *Subhransu Maji*, *Rui Wang*, International Conference on 3D Vision (3DV), 2017
31. **3D Shape Generation using Spatially Ordered Point Clouds**, *Matheus Gadhela*, *Subhransu Maji*, *Rui Wang*, British Machine Vision Conference (BMVC), 2017
32. **Improved Bilinear Pooling with CNNs**, *Tsung Yu Lin*, *Subhransu Maji*, British Machine Vision Conference (BMVC), 2017, **oral**
33. **Adapting Models to Signal Degradation using Distillation**, *Jong-Chyi Su*, *Subhransu Maji*, British Machine Vision Conference (BMVC), 2017
34. **3D Shape Segmentation with Projective Convolutional Networks**, *Evangelos Kalogerakis*, *Melinos Averkiou*, *Subhransu Maji*, *Siddharth Chaudhuri*, Computer Vision and Pattern Recognition (CVPR), 2017, **oral**
35. **Texture Attribute Synthesis and Transfer using Feed-forward CNNs**, *Thomas Irmer*, *Tobias Glasmachers*, *Subhransu Maji*, IEEE Winter Conference on Applications of Computer Vision (WACV), 2017
36. **Visualizing and Understanding Deep Texture Representations**, *Tsung-Yu Lin*, *Subhransu Maji*, IEEE Conference on Computer Vision (CVPR) 2016, Las Vegas, USA
37. **One-to-many Face Recognition with Bilinear CNNs**, *Aruni RoyChowdhury*, *Tsung-Yu Lin*, *Subhransu Maji*, *Erik Learned-Miller*, Winter Conference on Applications of Computer Vision (WACV) 2016
38. **Bilinear CNN Models For Fine-grained Visual Recognition**, *Tsung-Yu Lin*, *Aruni RoyChowdhury*, *Subhransu Maji*, International Conference on Computer Vision (ICCV) 2015 **oral**
39. **Multi-view CNNs for 3D Shape Recognition**, *Hang Su*, *Subhransu Maji*, *Evangelos Kalogerakis*, *Erik Learned-Miller* International Conference on Computer Vision (ICCV) 2015
40. **Deep Filter Banks for Texture Recognition and Segmentation** *Mircea Cimpoi*, *Subhransu Maji*, *Andrea Vedaldi* IEEE Conference on Computer Vision (CVPR) 2015, **oral**
41. **Learning Localized Perceptual Similarities for Interactive Categorization** *Catherine Wah*, *Subhransu Maji*, *Serge Belongie*, Winter Conference on Applications of Computer Vision (WACV) 2015, **best paper**
42. **Knowing a Good HOG Filter when You See it: Efficient Selection of Filters for Detection**, *Ejaz Ahmed*, *Gregory Shakhnarovich*, *Subhransu Maji*, European Conference on Computer Vision (ECCV) 2014, **oral**
43. **Parsing World's Skylines with Shape Constrained MRFs**, *Rashmi V. Tonge*, *Subhransu Maji*, *C.V. Jawahar*, IEEE Conference on Computer Vision (CVPR) 2014
44. **Similarity Comparisons for Interactive Fine-Grained Categorization**, *Catherine Wah*, *Grant Van Horn*, *Steven Branson*, *Subhransu Maji*, *Pietro Perona*, *Serge Belongie*, IEEE Conference on Computer Vision (CVPR) 2014
45. **Understanding Objects in Detail with Fine-grained Attributes**, *A. Vedaldi*, *S. Mahendran*, *S. Tsogkas*, *S. Maji*, *B. Girshick*, *J. Kannala*, *E. Rahtu*, *I. Kokkinos*, *M. B. Blaschko*, *D. Weiss*, *B. Taskar*, *K. Simonyan*, *N. Saphra*, *S. Mohamed*, IEEE Conference on Computer Vision (CVPR) 2014
46. **Describing Textures in the Wild**, *Mircea Cimpoi*, *Subhransu Maji*, *Iasonas Kokkinos*, *Sammy Mohamed*, *Andrea Vedaldi*, IEEE Conference on Computer Vision (CVPR) 2014

47. **Active Boundary Annotation using Random MAP Perturbations** *Subhransu Maji, Tamir Hazan, Tommi Jaakkola*, AISTATS 2014
48. **Learning Efficient Random MAP Predictors with Non-Decomposable Loss Functions**, *Tamir Hazan, Subhransu Maji, Joseph Keshet, Tommi Jaakkola*, Neural Information Processing Systems (NIPS) 2013
49. **On Sampling from the Gibbs Distribution with Random MAP Perturbations** *Tamir Hazan, Subhransu Maji, Tommi Jaakkola*, Neural Information Processing Systems (NIPS) 2013
50. **Part Discovery from Partial Correspondence**, *Subhransu Maji, Gregory Shakhnarovich*, IEEE Conference on Computer Vision (CVPR) 2013
51. **Describing People: A Poselet-Based Approach to Attribute Classification**, *Lubomir Bourdev, Subhransu Maji, Jitendra Malik*, International Conference on Computer Vision (ICCV) 2011, **oral**
52. **Semantic Contours from Inverse Detectors**, *Bharath Hariharan, Pablo Arbelaez, Lubomir Bourdev, Subhransu Maji, Jitendra Malik*, International Conference on Computer Vision (ICCV) 2011
53. **Action Recognition from a Distributed Representation of Pose and Appearance** *Subhransu Maji, Lubomir Bourdev, Jitendra Malik*, IEEE Conference on Computer Vision (CVPR) 2011
54. **Biased Normalized Cuts**, *Subhransu Maji, Nisheeth Vishnoi, Jitendra Malik*, IEEE Conference on Computer Vision (CVPR) 2011
55. **Object Segmentation by Alignment of Poselet Activations to Image Contours**, *Thomas Brox, Lubomir Bourdev, Subhransu Maji, Jitendra Malik*, IEEE Conference on Computer Vision (CVPR) 2011
56. **Detecting People Using Mutually Consistent Poselet Activations**, *Lubomir Bourdev, Subhransu Maji, Thomas Brox, Jitendra Malik*, European Conference on Computer Vision (ECCV) 2010
57. **Max-Margin Additive Classifiers for Detection**, *Subhransu Maji, Alexander Berg*, International Conference on Computer Vision (ICCV) 2009, **oral**
58. **Object Detection Using a Max-Margin Hough Transform**, *Subhransu Maji, Jitendra Malik*, IEEE Conference on Computer Vision (CVPR) 2009, **oral**
59. **Multiple-View Object Recognition in Band-Limited Distributed Camera Networks**, *Allen Y. Yang, Subhransu Maji, C. M. Christoudias, Trevor Darrell, Jitendra Malik and S. S. Sastry*, ICDCS 2009, **oral**
60. **Distributed Compression and Fusion of Nonnegative Sparse Signals for Multiple-View Object Recognition**, *Allen Y. Yang, Subhransu Maji, K. Hong, P. Yan, Shankar S. Sastry*, International Conference on Information Fusion (ICIF) 2009, **best paper**
61. **Classification using Intersection Kernel SVMs is Efficient**, *Subhransu Maji, Alexander Berg and Jitendra Malik*, IEEE Conference on Computer Vision (CVPR) 2008
62. **Confidence Based updation of Motion Conspicuity in Dynamic Scenes**, *Vivek Kumar Singh, Subhransu Maji, Amitabha Mukerjee*, Computer and Robot Vision (CRV) 2006

Workshops

1. **Visualizing and Describing Fine-grained Categories as Textures**, *Tsung-Yu Lin, Mikayla Timm, Chenyun Wu, Subhransu Maji*, The Sixth Fine-Grained Visual Categorization Workshop (FGVC6) at CVPR 19
2. **Jointly Learning Multiple Perceptual Similarities**, *Liwen Zhang, Subhransu Maji, and Ryota Tomioka*, Multi-View Representation Learning Workshop (MVRL) at ICML, 2016

3. **Distinguishing Weather Phenomena from Bird Migration Patterns in Radar Imagery**, Aruni RoyChowdhury, Daniel Sheldon, Subhransu Maji, Erik Learned-Miller, IEEE Worksop on Perception Beyond the Visual Spectrum (PBVS), 2016
4. **Visualizing Deep Texture Representations** Tsung-Yu Lin, Subhransu Maji, Workshop on Visualization for Deep Learning at ICML, 2016
5. **Learning Localized Perceptual Similarity Metrics for Interactive Categorization**, Catherine Wah, Subhransu Maji, and Serge Belongie, Human-Machine Communication for Visual Recognition and Search, ECCV 2014
6. **Using Human Knowledge to Judge Part Goodness: Interactive Part Selection** Ejaz Ahmed, Subhransu Maji, Gregory Shakhnarovich, Larry Davis, Workshop on Computer Vision and Human Computation, CVPR 2014
7. **Discovering a Lexicon of Parts and Attributes**, Subhransu Maji, Second International Workshop on Parts and Attributes, ECCV 2012, **oral**, *Best poster runner-up at Fine-Grained Visual Recognition Workshop*, 2013
8. **Linearized Smooth Additive Classifiers**, Subhransu Maji, Workshop on Web-scale Vision and Social Media, ECCV 2012, **oral**
9. **Part Annotations via Pairwise Correspondence**, Subhransu Maji and Gregory Shakhnarovich, 4th Workshop on Human Computation, AAAI 2012, **oral**
10. **Fast Unsupervised Alignment of Video and Text for Indexing Names and Faces**, Subhransu Maji and Ruzena Bajscy, Multimedia Semantics Workshop, ACM Multimedia 2007

Technical reports and preprints (non peer-reviewed)

1. **Fine-Grained Visual Classification of Aircraft**, Subhransu Maji, Esa Rahtu, Juho Kannala, Matthew Blaschko and Andrea Vedaldi, arXiv:1306.5151, Jun 2013
2. **Large Scale Image Annotations on Amazon Mechanical Turk** Subhransu Maji, EECS Department, UCB, Tech. Rep. UCB/EECS-2011-79, July 2011
3. **Fast and Accurate Digit Classification**, Subhransu Maji, Jitendra Malik, EECS Department, UCB, Tech. Rep. UCB/EECS-2009-159, Nov. 2009

Book chapters

1. **A Taxonomy of Part and Attribute Discovery Techniques**, Subhransu Maji, Visual Attributes, Springer, 2016, D. Parikh, R. Feris, C. Lampert, Eds.
2. **Perturbation Models and PAC-Bayesian Generalization Bounds** J. Keshet, S. Maji, T. Hazan, T. Jaakkola, Perturbations, Optimization, and Statistics, MIT Press, 2016, T. Hazan, G. Papandreou, and D. Tarlow, Eds.
3. **Multiple-view Object Recognition in Smart Camera Networks**, Allen Y. Yang, Subhransu Maji, M. C. Christoudias, Trevor Darrell, Jitendra Malik, Shankar S. Sastry, Distributed Video Sensor Networks, Springer, 2010

Student supervision

Current PhD students

- Oindrilla Saha, PhD student, UMass Amherst
- Gustavo Perez, PhD student, UMass Amherst
- Gopal Sharma, PhD student, UMass Amherst
- Zezhou Cheng, PhD student, UMass Amherst
- Wenlong Zhao, PhD student, UMass Amherst (synthesis project)

Graduated PhD Students

- Chenyun Wu, PhD student, UMass Amherst, 2021 (next to Google)
Thesis: *“Understanding of Visual Domains via the Lens of Natural Language”*
- Matheus Gadelha, PhD student, UMass Amherst, 2021 (next to Adobe)
Thesis: *“3D Shape Understanding and Generation”*
- JongChyi Su, PhD student, UMass Amherst, 2021 (next to Facebook)
Thesis: *“Learning from Limited Labeled Data for Visual Recognition”*
- TsungYu Lin, PhD student, UMass Amherst, 2020 (next to Facebook)
Thesis: *“Higher-order Representations for Visual Recognition”*

PhD Thesis Committee

- Zenglin Shi, PhD student, University of Amsterdam, 2022 (scheduled)
- Patsorn Sangkloy, PhD student, Georgia Tech, 2022
- Trapit Basal, PhD student, UMass Amherst, 2021
- Hang Su, PhD student, UMass Amherst, 2020
- Huaizu Jiang, PhD student, UMass Amherst, 2020
- Aruni RoyChowdhury, PhD student, UMass Amherst, 2020
- Pia Bideau, PhD student, UMass Amherst, 2020
- Souyoung Jin, PhD student, UMass Amherst, 2020
- Venkatesh N. Murthy, PhD student, UMass Amherst, 2019
- Tao Sun, PhD student, UMass Amherst, 2018
- Zhaoliang Lun, PhD student, UMass Amherst, 2017
- Arvind R Neelakantan, PhD student, UMass Amherst, 2017
- David Belanger, PhD student, UMass Amherst, 2017
- Steven Cheng-Xian Li, PhD student, UMass Amherst, 2016

Interns and student collaborators

- Abhishek Lalwani, MS student, 2020
- Edward Schneeweiss, MS student, 2020
- Prithwjit Chakrabarty, MS student, 2020
- Samantha Cote, Undergraduate student, UMass Amherst, *honors project*, 2019
- Tongyi Cao, PhD student, UMass Amherst, *synthesis project*, 2019
- Kwonjoon Lee, PhD student, UCSD, *summer intern*, 2018
- Yang Zhou, PhD student, UMass Amherst, *synthesis project*, 2018
- Emma Strubell, PhD student, UMass Amherst, *synthesis project*, 2016
- Thomas Irmer (MS student at Ruhr-Universität Bochum, co-advised with Tobias Glasmachers)
- Brayden Neal, undergraduate student (REU program), UPenn, Summer 2016 (*current*)
- Liwen Zhang, PhD student at University of Chicago (Co-supervised with Ryota Tomioka) (*current*)
- Mikayla Trimm, undergraduate student (REU program), UCF, Summer 2015
- Kundan Kumar, undergraduate student, IIT Kanpur, Summer 2015
- Mircea Cimpoi, PhD student at Oxford University (Co-supervised w/ Andrea Vedaldi), 2013-2015
- Ejaz Ahmed, PhD student at UMD (Intern w/ Greg Shakhnarovich), summer 2014
- Catherine Wah, PhD student at UCSD, Intern, Feb - April '13, Jan - April '14
- Rashmi Tonge, MS student at IIIT Hyderabad (Thesis co-supervisor w/ C.V. Jawahar), 2013 - 2014

Teaching

- Instructor, CMPSCI 370: Intro. to Computer Vision, UMass Amherst, Spring 2021
- Instructor, CMPSCI 670: Computer Vision, UMass Amherst, Fall 2020
- Instructor, CMPSCI 670: Computer Vision, UMass Amherst, Fall 2019
- Instructor, CMPSCI 370: Intro. to Computer Vision, UMass Amherst, Spring 2018
- Instructor, CMPSCI 670: Computer Vision, UMass Amherst, Fall 2018 (61 students)
- Instructor, CMPSCI 370: Intro. to Computer Vision, UMass Amherst, Spring 2018 (51 students)
- Instructor, CMPSCI 670: Computer Vision, UMass Amherst, Fall 2017 (66 students)
- Instructor, CMPSCI 370: Intro. to Computer Vision, UMass Amherst, Spring 2017 (40 students)
- Instructor, CMPSCI 670: Computer Vision, UMass Amherst, Fall 2016 (39 students)
- Instructor, CMPSCI 370: Intro. to Computer Vision, UMass Amherst, Spring 2016 (33 students)
- Instructor, CMPSCI 370HH: Honors section for 370, UMass Amherst, Spring 2016 (4 students)
- Instructor, CMPSCI 689: Machine Learning, UMass Amherst, Spring 2015 (39 students)
- Instructor, CMPSCI 670: Computer Vision, UMass Amherst, Fall 2014 (25 students)
- Guest lecturer, Visual Recognition , TTI Chicago, Winter 2012
- Guest lecturer, CS 294: Visual Search Engines, UC Berkeley, Fall 2010
- Guest lecturer, CS 280: Computer Vision, UC Berkeley, Spring 2010

- GSI for CS 162, Operating Systems and Systems Programming, UC Berkeley, Fall 2006
- Organized and taught 'Data Structures and Algorithms', IIT Kanpur, Summer 2006

Invited talks, presentations, etc.

- Modeling visual tasks and their relations
 - Computer vision seminar, *University of Amsterdam*, 2021
 - Computer vision seminar, *TU Delft*, 2021
 - Computer vision seminar, *KU Leuven*, 2021
 - CVIT Summer School, *IIT Hyderabad*, 2021
 - Invited talk, *AIBee*, 2021
 - Department colloquium, *Boston University*, 2020
 - Department colloquium, *Yale University*, 2020
 - Department colloquium, *University of Maryland, College Park*, 2020
 - Department colloquium, *University of Chicago*, 2020
 - Department colloquium, *Toyota Technological Institute at Chicago*, 2020
 - Keynote talk, *WebFG Workshop, ACCV 2020*
 - Keynote talk, *Exteme Vision Modeling Workshop, ICCV 2019*
 - Invited talk, *CVPR Area Chair Workshop, USCD*, 2019
 - Invited talk, *ICERM Workshop, Brown University*, 2019
- DarkEcology: Unraveling Mysteries of Bird Migration using Weather Radar and Machine Learning, Keynote talk, *Computer Vision for Wildlife Conservation (CVWC) Workshop, ICCV 2019*
- Adversarial Attacks Against Machine Learning Systems, Security Seminar, UMass Amherst (Fall 18)
- Learning to generate 3D shapes, Caltech (August 2018)
- Improved bilinear CNNs via the Matrix Square-Root and its Gradient, Manifold Learning Workshop, ICCV 2017.
- Factorized architectures for fine-grained recognition, Amazon AWS AI (Sept 2017)
- Cross quality distillation (or “How to see Blurry pictures better”), Google Research, *Cambridge, MA* (June 2016)
- Invited talk, CVPR16 Area Chair Workshop, *Vancouver* (Feb 2016)
- Bilinear CNN models for fine-grained visual recognition
 - Department Colloquium, *University of Rochester* (April 2017)
 - Department Colloquium, *Rochester Polytechnic Institute* (April 2017)
 - Department Colloquium, *Worcester Polytechnic Institute* (Sept 2016)
 - Computer vision seminar, *Boston University* (March 2016)
 - Computer vision seminar, *University of Washington* (Oct 2015)
 - Microsoft Research, *Seattle* (Oct 2015)

- Computer vision seminar, *UC Berkeley* (Sept 2015)
- Google research, *Mountain view* (Sept 2015)
- Computer vision seminar, *MIT* (May 2015)
- Invited talk, ImageNet workshop at ICCV15, *Santiago* (Dec 2015)
- The world of computer vision, Science Quest, *UMass Amherst* (Oct 2015)
- But what is it made of? (“Learning to recognize materials”), Faculty seminar, *UMass Amherst* (Dec 2014)
- Rich semantic representations for detailed visual recognition
 - Invited talk, *Toyota Technological Institute at Chicago* (April 2014)
 - Invited talk, *University of Minnesota, Twin-Cities* (March 2014)
 - Invited talk, *Imperial College London* (March 2014)
 - Invited talk, *Microsoft research, Cambridge, UK* (March 2014)
 - Invited talk, *Adobe Research, San Francisco* (March 2014)
 - Invited talk, *University of North Carolina, Chapel Hill* (March 2013)
 - Invited talk, *University of Southern California* (March 2013)
 - Invited talk, *University of Maryland, College Park* (March 2013)
 - Invited talk, *University of California, Berkeley* (March 2013)
 - Invited talk, *University of Massachusetts, Amherst* (Feb 2014)
- Discovering the structure of visual categories
 - Robotics seminar, *Oxford University* (Sept 2013)
 - Invited talk, *Microsoft research, Cambridge, UK* (Sept 2013)
 - Machine learning and friends seminar, *UMass, Amherst* (Oct 2013)
 - Invited talk, *Kyoto university* (May 2013)
 - Faculty research seminar, *Toyota Technological Institute, Chicago* (2013)
- Discovering a lexicon of parts and attributes
 - CLSP Summer Workshop, *Johns Hopkins University* (2012)
 - Midwest vision workshop, *UIUC* (2012)
 - Keynote talk, Workshop on Parts and Attributes, *ECCV Florence* (2012)
 - Computer vision seminar, *Caltech* (2012)
- Linearized Smooth Additive Classifiers, Workshop on Web-scale Vision and Social Media, *ECCV, Florence* (2012)
- Fast and accurate object and action detection
 - Computer vision seminar, *MIT* (2011)
 - Robotics institute seminar, *CMU* (2011)
 - Invited talk, Google research, *Mountain view* (2011)

- Vision workshop, *Mysore park* (2011)
- Large-scale image annotations using Amazon mechanical turk
 - Intel research, *Berkeley* (2011)
 - RAD LAB seminar, *Berkeley* (2011)
 - Machine learning tea, *Berkeley* (2011)