

## EDUCATION

**Robotics Institute, Carnegie Mellon University**  
Ph.D. (ongoing)

**Robotics Institute, Carnegie Mellon University**  
M.S. in Robotics, 2017 (GPA 4.09)

**Indian Institute of Technology (IIT), Guwahati**  
B.Tech. Electronics and Electrical Engineering, 2014  
Minor: Computer Science

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## PUBLICATIONS

**Audio-Visual Floorplan Reconstruction** [\[PDF\]](#)  
Senthil Purushwalkam, Sebastian Vicenc Amengual Gari, Vamsi Krishna Ithapu,  
Carl Schissler, Philip Robinson, Abhinav Gupta, Kristen Grauman  
*Under review.*

**Demystifying Contrastive Self-Supervised Learning: Invariances, Augmentations  
and Dataset Biases** [\[PDF\]](#)  
Senthil Purushwalkam, Abhinav Gupta  
*Advances in Neural Information Processing Systems 33 (NeurIPS) 2020*

**Aligning Videos in Space and Time** [\[PDF\]](#)  
Senthil Purushwalkam, Tian Ye, Saurabh Gupta, Abhinav Gupta  
*European Conference on Computer Vision (ECCV) 2020.*

**Task-Driven Modular Networks for Zero-Shot Compositional Learning** [\[PDF\]](#)  
Senthil Purushwalkam, Maximilian Nickel, Abhinav Gupta, Marc'Aurelio Ranzato  
*International Conference on Computer Vision (ICCV) 2019.*

**Bounce and Learn: Modeling Scene Dynamics with Real-World Bounces** [\[PDF\]](#)  
Senthil Purushwalkam, Abhinav Gupta, Danny Kaufman, Bryan Russell  
*International Conference on Learning Representations (ICLR) 2019.*

**Stochastic Multiple Choice Learning for Training Diverse Deep Ensembles.** [\[PDF\]](#)  
Stefan Lee, Senthil Purushwalkam, Michael Cogswell, Viresh Ranjan,  
David Crandall, Dhruv Batra  
*Advances in Neural Information Processing Systems (NIPS) 2016.*

**Pose from Action: Unsupervised Learning of Pose Features based on Motion.** [\[PDF\]](#)  
Senthil Purushwalkam, Abhinav Gupta  
*Workshop on Action and Anticipation for Visual Learning at ECCV 2016.*

**Applying machine learning to identify autistic adults using imitation: An exploratory study.** [\[PDF\]](#)  
Baihua Li, Arjun Sharma, James Meng, Senthil Purushwalkam, and Emma Gowen.  
*PloS one 12.8 (2017)*

**Why M Heads are Better than One: Training a Diverse Ensemble of Deep Networks.** [\[PDF\]](#)  
Stefan Lee, Senthil Purushwalkam, Michael Cogswell, David Crandall, Dhruv Batra.

*Arxiv preprint arXiv:1511.06314*

**Combining the Best of Graphical Models and ConvNets for Semantic Segmentation.** [\[PDF\]](#)

Michael Cogswell, Xiao Lin, Senthil Purushwalkam, Dhruv Batra.

*Arxiv preprint arXiv:1412.4313.*

**Automatic Segmentation of Adipose Tissue from Thigh Magnetic Resonance Images.** [\[PDF\]](#)

Senthil Purushwalkam, Baihua Li, Qinggang Meng, Jamie McPhee.

*International Conference on Image Analysis and Recognition (ICIAR) 2013.*

## EXPERIENCE

<b>Research Intern, Facebook AI Research</b> Advisor: Kristen Grauman	Jun 2020 - Present
<b>Research Intern, Facebook AI Research</b> Advisor: Marc'Aurelio Ranzato	Sept 2018 - Dec 2018
<b>Research Intern, Adobe Research</b> Advisors: Bryan Russell, Danny Kaufman	May 2017 - Aug 2017
<b>Graduate Research Assistant, Carnegie Mellon University</b> Advisor: Abhinav Gupta	Sept 2015 - Present
<b>Research Assistant, Virginia Tech</b> Advisor: Dhruv Batra	Sept 2014 - May 2015
<b>Research Intern, University of Tokyo</b> Advisor: Tatsuya Harada	May 2014 - Jul 2014
<b>Research Intern, Virginia Tech</b> Advisors: Dhruv Batra, Ross Girshick	May 2013 - Jul 2013
<b>Undergraduate Researcher, IIT Guwahati</b> Advisor: Suresh Sundaram	Aug 2013 - May 2014

## OTHER PROJECTS

<b>Unsupervised Learning by completing partially occluded CAD renderings</b> <a href="#">[Report]</a> <i>Visual Learning and Learning Course Project, Spring 2016   Prof. Abhinav Gupta</i>
<b>Dropout training for Hidden Unit CRFs</b> <a href="#">[Report]</a> <i>Machine Learning Course Project, Fall 2015   Prof. Eric Xing &amp; Prof. Ziv Bar-Joseph</i>
<b>Text2Face: Generating Faces from Words using Eigenfaces and GMMs</b> <a href="#">[Report]</a> <i>Computer Vision Course Project, Fall 2015   Prof. Abhinav Gupta &amp; Prof. Srinivasa Narasimhan</i>
<b>Augmented Hard Negative Classes for Image Classification</b> <a href="#">[ECCV '14 Talk]</a> Senthil Purushwalkam, Asako Kanezaki, Yuichiro Tsuchiya, Tatsuya Harada. <i>ILSVRC 2014 submission (3rd place), University of Tokyo</i>

## ACADEMIC DUTIES

**Reviewer:** ECCV 2018, CVPR 2018, CoRL 2018, ICML 2019, CVPR 2019, ICCV 2019, CVPR 2020, ECCV 2020, NeurIPS 2020, Shared Visual Representations in Human and Machine Intelligence workshop NeurIPS 2020

**Teaching:** Teaching Assistant - Visual Learning and Recognition - Spring 2016 (CMU)  
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Teaching Assistant - Visual Learning and Recognition - Spring 2018 (CMU)

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