## Satwik Kottur

Curriculum Vitae Last updated: March 13, 2019

EDUCATION

## Carnegie Mellon University, Pittsburgh

E-mail: skottur@andrew.cmu.edu

Ph.D., Department of Electrical and Computer Engineering 2014–2019 (Expected)

Master of Science, Department of Electrical and Computer Engineering 2014–2017

Webpage: satwikkottur.qithub.io

- Advisor: Prof. José M. F. Moura
- Interests: Computer vision, deep learning, and artificial intelligence
- GPA: 4.00/4

# Indian Institute of Technology Bombay, Mumbai

Bachelor of Technology, Department of Electrical Engineering,

2010-2014

Summer '18

- Advisor: Prof. Subhasis Chaudhuri
- Honors in Electrical Engineering, Minor in Computer Science and Engineering
- GPA: 9.52/10

Internships

## Google Brain, Mountain View

Mentor: Prof. Gal Chechik

Worked on language emergence in a population of cooperative agents

#### Facebook AI Research (FAIR), Menlo Park

Summer '17

Mentors: Marcus Rohrbach, Prof. Devi Parikh, Prof. Dhruv Batra Worked on explicit visual coreference resolution in visual dialog

## Snap Research, Los Angeles

Summer '16

Mentors: Vitor Carvalho, Xiaoyu Wang

Worked on context-aware dialog models with user personalization

#### University of Southern California, Los Angeles

Summer '13

Mentor: Prof. Gerard Medioni

Worked on counting static cars in the scene from aerial imagery

# AWARDS & ACHIEVEMENTS

- Snap Inc. Research Fellowship (2018), 1 of 12 students from 100+ applicants
- Best paper award, 1 of 4 best papers (top 0.26%) out of 1500 submissions at EMNLP 2017
- Best reviewer award (top 3.6%) at Neural Information Processing Systems (NIPS), 2017 as a recognition from the area chairs for quality reviewing
- Carnegie Institute of Technology Dean's Fellowship (2014) to pursue graduate studies
- Viterbi-India Scholarship (2013) to pursue research at Viterbi School of Engineering
- Bronze medal at International Olympiad for Astronomy and Astrophysics (2010), Beijing
- Secured AIR 6 in IITJEE 2010 (achieved the best score in physics) among 470k students

#### **PUBLICATIONS**

- [1] CLEVR-Dialog: A Diagnostic Dataset for Multi-Round Reasoning in Visual Dialog. S. Kottur, J. M. F. Moura, D. Parikh, D. Batra, M. Rohrbach, North American Chapter of the Association for Computational Linguistics (NAACL), 2019 (Oral)
- [2] Visual Coreference Resolution in Visual Dialog using Neural Module Networks. S. Kottur, J. M. F. Moura, D. Parikh, D. Batra, M. Rohrbach, European Conference on Computer Vision (ECCV), 2018
- [3] Natural Language Does Not Emerge 'Naturally' in Multi-Agent Dialog. S. Kottur, J. M. F. Moura, S. Lee, D. Batra, Empirical Methods in Natural Language Processing (EMNLP), 2017 (Best Short Paper)

- [4] Deepsets. M. Zaheer, S. Kottur, S. Ravanbakhsh, B. Póczos, R. Salakhutdinov, A. Smola, Conference on Neural Information Processing Systems (NIPS), 2017 (Oral)
- [5] Learning Cooperative Visual Dialog Agents with Deep Reinforcement Learning. A. Das\*, S. Kottur\*, J. M. F. Moura, S. Lee, D. Batra, International Conference on Computer Vision (ICCV), 2017 (Oral)
- [6] Canopy—Fast Sampling with Cover Trees.
   M. Zaheer\*, S. Kottur\*, J. M. F. Moura, A. Ahmed, A. Smola, International Conference on Machine Learning (ICML), 2017 (Oral)
- [7] Exploring Personalized Neural Conversational Models.
   S. Kottur, X. Wang, V. Carvalho,
   International Joint Conference on Artificial Intelligence (IJCAI), 2017
- [8] Visual Dialog.

A. Das, S. Kottur, K. Gupta, A. Singh, D. Yadav, J. M. F. Moura, D. Parikh, D. Batra, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2017 (Spotlight)

- [9] Visual Word2Vec (vis-w2v): Learning Visually Grounded Word Embeddings from Abstract Scenes. S. Kottur, R. Vedantam, J. M. F. Moura, D. Parikh, IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2016
- [10] Comparing Gibbs, EM and SEM for MAP Inference in Mixture Models. M. Zaheer, M. Wick, S. Kottur, J. Tristan, OPT: NIPS Workshop on Optimization for Machine Learning, 2015
- [11] Traffic Flow from a Low Frame Rate City Camera.
   E. Toropov, L. Gui, S. Zhang, S. Kottur, J. M. F. Moura, Big Data Processing and Analysis (special session), IEEE International Conference on Image Processing (ICIP), 2015

Journals

[1] Visual Dialog.

A. Das, S. Kottur, K. Gupta, A. Singh, D. Yadav, S. Lee, J. M. F. Moura, D. Parikh, D. Batra, *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 2018 \* = equal contribution

OTHER ACADEMIC & PROFESSIONAL EXPERIENCES

Reviewer, CVPR 2019, CVPR 2018, ECCV 2018, ICML 2018, NIPS 2018, NIPS 2017 (best reviewer award), NIPS 2016

#### Workshop Organizer

- Visually-Grounded Interaction and Language (ViGIL) Workshop, Conference on Neural Information Processing Systems (NIPS), 2017
- VQA Challenge and Visual Dialog Workshop,
   IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018

#### Challenge Organizer

 Visual Dialog Challenge, Workshop on Shortcomings in Vision and Language, European Conference on Computer Vision (ECCV), 2018

## Teaching Assistant

• Convex Optimization (18-460), Carnegie Mellon University Instructors: Prof. Giulia Fanti

- Spring '18
  Fall '17
- Signals and Systems (18-290), Carnegie Mellon University
  Instructors: Prof. Aswin Sankaranarayanan and Prof. Richard Stern
- Differential Equations (MA-108), IIT Bombay Instructors: Prof. Akhil Ranjan

Spring '14