# Qing Sun

## Personal Data


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| Place and Date of Birth: | Tianjin, China \| 31 August 1987 |
| Address: | 415 Charles St, Sunnyvale, CA, USA |
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## Work Experience

**Aug 2013 - Dec, 2017** — Research Assistant @ Machine Learning & Perception Lab (Advisor: Dhruv Batra), Virginia Tech, USA

- Inference in Bidirectional RNNs (CVPR 2017)
- Submodular function maximization in computer vision problems (SubmodBox, NIPS 2015)
- Produce diverse outputs from structured probabilistic models (Active Learning + DivMBest, CVPR 2015)

**Sep 2016 - May 2017** — Intern @ Institute of Deep Learning, Baidu Research, USA

- One Shot Visual Question Answering (Learning to learn)

**Aug 2012 - Aug 2013** — Research Assistant @ CBIL, Virginia Tech, USA

- Risk markers and interaction loci detection on Myocardial Infarction and lupus erythematosus (AIM, logistic regression)

**Sep 2009 - Jan 2012** — Research Assistant @ TJU (Advisor: Huaxiang Wang), China

- Pulmonary signal separation (MWPCA)
- Dielectric property and representation method of human vivo tissue
- Hard wire circuit design and Finite element analysis on Mesh Wire sensor (PROTEL, COMSOL)

## Education

**Dec 2017** — Ph.D., Virginia Tech, USA

**Jan 2012** — M.S., Tianjin University, China
Thesis: Image Reconstruction Algorithm Research based on Electrical Tomography
Advisor: Prof. Huaxiang Wang (Excellent Master Thesis Award)

**Jul 2009** — B.S., Tianjin University, China
Thesis: 3D Model Simulation and Forward Problem Researchon Bio-EIT
Advisor: Prof. Huaxiang Wang

**Jul 2009** — B.A., Nankai University, China

## Publications

**Journal Articles**

- **Qing Sun**, Huaxiang Wang. Optimization Design of a New Wire-Mesh Sensor. *Chinese Journal of Sensors and Actuators, 2010*

**Peer-reviewed Conference Papers (acceptance rate typically 2%-25%)**

- Ashwin K Vijayakumar, Michael Cogswell, Ramprasath R. Selvaraju, **Qing Sun**, Stefan Lee, David Crandall, Dhruv Batra. Diverse Beam Search: Decoding Diverse Solutions from Neural Sequence Models. *AAAI Conference on Artificial Intelligence, (AAAI) 2018*
- **Qing Sun**, Stefan Lee, Dhruv Batra. Fill-in-the-Blank Image Captioning with Bidirectional Beam Search. *Computer Vision and Pattern Recognition (CVPR) 2017*
- **Qing Sun**, Dhruv Batra. SubmodBoxes: Near-Optimal Search for a Set of Diverse Object Proposals. *Neural Information Processing Systems (NIPS) 2015*
- **Qing Sun**, Ankit Laddha, Dhruv Batra. Active Learning for Structured Probabilistic Models with Histogram Approximation. *Computer Vision and Pattern Recognition (CVPR) 2015* (oral, accept rate: 3.3%)
- **Qing Sun**, Huaxiang Wang. Mesh wire tomography combined with a modified sensitivity map. *IST 2011* (oral)

**Workshop Papers**

- **Qing Sun**, Dhruv Batra. Beam Search Message Passing in Bidirectional RNNs: Applications to Fill-in-the-Blank Image Captioning. Deep Learning Summer School, Montreal, 2016. (contributed talk)
- **Qing Sun**, Dhruv Batra. Near Optimal Bounding Box Search. *Mid Altantic Computer Vision (MACV) 2015*
- **Qing Sun**, Ankit Laddha, Dhruv Batra. Active Learning for Structured Probabilistic Models. *Workshop on Scene Understanding (SUNw), CVPR, 2014*
- **Qing Sun**, Ankit Laddha, Dhruv Batra. Active Learning in Structured Probabilistic Models with Deterministic Samples. *Mid Altantic Computer Vision (MACV) 2014* (oral)

## Talks(Not including conference presentations)

- Greedy Inference Algorithms for Structured and Neural Models. Sep 2017, hosted by Kate Saenko and Stan Sclaroff, at Boston University.
- Bayesian Neural Network. Fall 2015: ECE 6504. https://computing.ece.vt.edu/~f15ece6504/

## Projects

- Understanding Predictions of Structured Probabilistic Vision Systems. Course Project advised by Dr. Dhruv Batra.

## Teaching

- Fall 2013: ECE 4984/5984: Introduction to Machine Learning & Perception (Teaching Assistant, Instructor: Dhruv Batra)
- Spring 2015: ECE 5984: Introduction to Machine Learning (Teaching Assistant, Instructor: Dhruv Batra)

## Professional Service Activities

**Conference / Journal reviewers**

- NIPS 2016, ECCV 2016, CVPR 2017, ICCV 2017, NIPS 2017, CVPR 2018
- Statistics and Probability Letters 2015

## Programming Language

- C/C++, Python, Matlab, Lua
- Packages: Caffe, Torch, Tensorflow, PaddlePaddle

## Honors & Awards

- 2010, First class Siemens Endowed Scholarship
- 2010, 2007, School-level merit student, First class scholarship
- 2009, Excellent graduate for superior academic performance
- 2008, 2006, Colledge-level merit student, Second class scholarship
- 2007, First class TURCK Endowed Scholarship