

# Soravit Beer Changpinyo



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## EDUCATION

**University of Southern California** Los Angeles, CA 2012-2018 (expected)  
Ph.D. Candidate in Computer Science. Current GPA: 3.97/4.00. Advisor: Prof. Fei Sha  
**Brown University** Providence, RI 2008-2012  
B.S. in Computer Science, *magna cum laude* (GPA: 4.00/4.00) with Honors.

## RESEARCH & WORK EXPERIENCES

**Software Engineering Intern** Google Research, New York City Summer 2017  
Large-scale temporal and higher-order analysis of the discourse of topics on the Web Host: Richard Zens

**Software Engineering Intern** Google Research, Mountain View Summer 2016  
Convolutional neural network compression with sparse, random connectivity patterns [P2] Host: Mark Sandler  
▪ Generalized 2D convolution with channel-wise sparsity. Showed that sparse convolutions outperform dense convolutions at high compression rates for large networks including Inception.

**Research Assistant** University of Southern California Fall 2012-present  
Modeling, Learning, and Leveraging Similarity Supervisor: Prof. Fei Sha  
▪ Learning with limited data including zero-shot and multi-task learning  
▪ Non-metric similarity modeling  
▪ Applications in computer vision and natural language processing

**Research Assistant** Brown University Fall 2011 & Spring 2012  
Bayesian nonparametric methods for images [T1] and topic modeling Supervisor: Prof. Erik Sudderth

**Research Intern** Information Trust Institute, University of Illinois at Urbana-Champaign Summer 2011  
Keyword search over semi-structured information sources Supervisors: Profs. Marianne Winslett & Arash Termehchy

**Research Assistant** (Karen T. Romer Undergraduate Research Award) Brown University Summer 2010  
Transactional memory on embedded devices Supervisors: Profs. Maurice Herlihy & R. Iris Bahar

## PUBLICATIONS

### Peer-reviewed Conference Proceedings

- [C5] S. Changpinyo, H. Hu, and F. Sha. Multi-Task Learning for Sequence Tagging: An Empirical Study. COLING, 2018.  
[C4] S. Changpinyo, W.-L. Chao, and F. Sha. Predicting Visual Exemplars of Unseen Classes for Zero-shot Learning. ICCV, 2017.  
[C3] W.-L. Chao, S. Changpinyo, B. Gong, and F. Sha. An Empirical Study and Analysis of Generalized Zero-Shot Learning for Object Recognition in the Wild. ECCV, 2016. (Oral spotlight, 4.9% acceptance rate)  
[C2] S. Changpinyo, W.-L. Chao, B. Gong, and F. Sha. Synthesized Classifiers for Zero-Shot Learning. CVPR, 2016. (Oral, 3.9% acceptance rate)  
[C1] S. Changpinyo, K. Liu, and F. Sha. Similarity Component Analysis. NIPS, 2013. (25% acceptance rate)

### Pre-prints

- [P2] S. Changpinyo, M. Sandler, and A. Zhmoginov. The Power of Sparsity in Convolutional Neural Networks. arXiv, 2017.  
[P1] S. Changpinyo, Z. Lu, and F. Sha. Probabilistic Latent Multi-Sense Skip-Gram. 2016.

### Thesis

- [T1] S. Changpinyo. Learning Image Attributes using the Indian Buffet Process. Sc.B. Honors Thesis, Brown University, 2012.

## TECHNICAL SKILLS

### Programming Languages

■■■■□ Python, C/C++, Matlab, Java, LaTeX  
■■□□□ SQL, HTML/CSS, JavaScript, PHP, R

### Frameworks

■■■■□ TensorFlow, Theano, PyTorch  
■■□□□ Caffe, Torch

## SELECTED HONORS

Annenberg Graduate Fellowship, University of Southern California (2012-2016)  
Royal Thai Government Scholarship (2007-2012)

## SERVICES

### Reviewer

2018 Computer Vision and Pattern Recognition (CVPR), Pattern Recognition  
2017 Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Computer Vision and Image Understanding (CVIU), AAAI Conference on Artificial Intelligence (AAAI)  
2016 Neural Information Processing Systems (NIPS)  
2014 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD)

## TEACHING EXPERIENCE

### Teaching Assistant

Machine Learning (CSCI567)	Prof. Fei Sha	Fall 2017
Special Topics in Machine Learning: Generative models & Reinforcement learning (CSCI599)	Prof. Fei Sha	Spring 2017
Introduction to Machine Learning (CSCI1950f)	Prof. Erik Sudderth	Spring 2012
Scientific Computing and Problem Solving (CSCI0040)	Dr. Christopher Crick	Spring 2011
Models of Computation (CSCI0500)	Prof. John Savage	Fall 2010

## SELECTED COURSEWORK

### Math & Theoretical Computer Science

Mathematical and High-Dimensional Statistics, Convex Optimization, Combinatorial Optimization, Functional Analysis, Probabilistic Methods, Approximation Algorithms, Cryptography, Theory of Machine Learning.

### Machine Learning & Applied Computer Science

Probabilistic Graphical Models, Bayesian Nonparametrics, Deep Learning, Computer Vision, Natural Language Processing, Information Retrieval, Computational Biology, Digital Geometry Processing.

### Others

Web Technologies, Database Management Systems, Software Engineering, Computer Systems.

## SELECTED PROJECTS

Distributed Inference with Little Communication	Matlab	2014
Online Learning Algorithms from a Primal-Dual Perspective		2013
Wikipedia Search Engine	Python	2011
Settlers of Catan with Online Multiplayer Feature	Java	2010
Othello and Tetris	Java	2008

## SELECTED EXTRACURRICULAR ACTIVITIES

**Co-organizer of Trojan AI Social** for discussing topics that go beyond day-to-day research in AI (2017)

**Tennis** Brown University Intramural Champions (Spring 2010 & Fall 2011)

**Southeast Asian Service Leadership Network (SEALNet)'s Active Learning Outreach** Project Thailand (Summer 2009)