

Peng Qi

121 Campus Dr., Apt. 3202B, Stanford, CA 94305

+1 (650) 862-9799 • pengqi@cs.stanford.edu • <http://qipeng.me/>

EDUCATION & PROFESSIONAL EXPERIENCES

Stanford University

Sep. 2013 – present

Master of Science, Computer Science

- Course Highlights: Machine Learning, Statistical Learning Theory, Convex Optimization I & II, Natural Language Processing, Natural Language Understanding

Research Assistant, Stanford Artificial Intelligence Laboratory

Tsinghua University

Research Assistant, State Key Laboratory of Intelligent Technology & Systems

Jul. 2011 – Jun. 2013

Bachelor of Engineering (magna cum laude), School of Software Sep. 2008 – Jul. 2012

Major GPA: 89.9 / 100 Major Rank: Top 5%

PUBLICATIONS

Andrew L. Maas, Awni Y. Hannun, Christopher T. Lengerich, **Peng Qi**, Daniel Jurafsky, and Andrew Y. Ng. Increasing deep neural network acoustic model size for large vocabulary continuous speech recognition. *arXiv preprint arXiv:1406.7806*, 2014

Peng Qi and Xiaolin Hu. Learning nonlinear statistical regularities in natural images by modeling the outer product of image intensities. *Neural computation*, 26(4):693–711, 2014

Xiaolin Hu, Jianwei Zhang, **Peng Qi**, and Bo Zhang. Modeling response properties of v2 neurons using a hierarchical k-means model. *Neurocomputing*, 134:198–205, 2014

Peng Qi, Shuochen Su, and Xiaolin Hu. Modeling outer products of features for image classification. In *Advanced Computational Intelligence (ICACI)*, 2013.

Xiaolin Hu, **Peng Qi**, and Bo Zhang. Hierarchical k-means algorithm for modeling visual area V2 neurons. In *Neural Information Processing*, pages 373–381, 2012. *Best Paper Award*

EXPERIENCE

Stanford A.I. Lab

Sep. 2013 – present

Large-Vocabulary Continuous Speech Recognition with Deep Learning

- Built a HMM-GMM speech recognition system the largest speech corpus in academia (Fisher+Switchboard 2100-hour corpus) in Kaldi, and prepared the first set of script for the RT-03 evaluation set
- Analyzed performances and various properties as DNN acoustic models scale up
- Investigated the effect of incorporating auxiliary information and varying network structure (CS229 Project [↗](#))

CS 224U Natural Language Understanding Course Project

Mar. 2013 – present

Learning Unsupervised Semantic Word Vectors for Sentence Completion

- Implemented various unsupervised semantic word vector models and applied them to sentence completion
- Proposed a novel neural language model extending word2vec for sentence completion

CS 229T Statistical Learning Theory Course Project Jan. 2013 – present
Empirically Efficient Methods for Training Deep Neural Networks

- Implemented and investigated the training efficiency of various adaptive gradient methods and accelerated gradient methods applied to deep neural networks

Contributing Open Source Projects

Caffe [↗](#)

- Implemented a framework for generic solvers
- Implemented Nesterov's Accelerated Gradient solver and AdaGrad solver
- Contributed a number of neuron layers (Leaky ReLU, Mean-variance normalization)
- Compatibility issues / bug fixes for Mac OS

Kaldi [↗](#)

- Contributed the first training recipe for the Fisher/Switchboard mixed speech corpus (the largest speech corpus in use in academia)
- A bug fix for Kaldi's speaker identification for better speaker heldout training

ConvolutionalRBM.m [↗](#) (Owner)

- An implementation of Lee *et al.*'s convolutional restricted Boltzmann machine model in Matlab, MEX (C++/CUDA)

LazyBLAS [↗](#) (Owner)

- An initiative for unifying CPU BLAS and GPU cuBLAS to provide a maximally parallelized device-transparent API to scientific computing users, in the hope of better utilizing available computing resources for BLAS operations

GraphCut [↗](#)

- A fast CPU/GPU hybrid implementation for min-cut problems in grid graphs

Other Project Experiences (Highlights)

2008 – 2012

- Semantic Query Optimization in HyperSQL-DB the Open Source Database
- Semantic-directed LR Grammar Analyzer Generator [↗](#)

ACADEMIC SERVICE *Teaching:*

- TA, CS 224S Spoken Language Processing (Spring 2014)
- TA, CS 145 Introduction to Databases (Summer 2014)
- Tutor, CS 145 Introduction to Databases, CS 107 Computer Organization and Systems, CS 245 Database Systems Principles

Paper Reviewing: IEEE TNNLS, ICACI 2013

MISCELLANEOUS

Honors: China's National Scholarship (top 3% university-wide at Tsinghua), Freshman Scholarship (provincial top 10 in college entrance exam), and other merit-based awards

Programming: Experienced with C/C++, CUDA, Matlab/MEX, Python, Java; Working knowledge of *nix Bash, Javascript (node.js/jQuery), Haskell, PHP, C#, HTML5/CSS3, Perl, etc.

Leadership: Vice president of Students' Union, School of Software, Tsinghua University (2010 – 2011)

Open Courses (MOOCs): Machine Learning, Probabilistic Graphical Models (with Distinction), Neural Networks for Machine Learning, Heterogeneous Parallel Programming (with Distinction), Linear and Discrete Optimization, Game Theory, Microeconomics Principles