

Aodong Li

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Education

New York University

M.S. IN COMPUTER SCIENCE, GPA 3.95/4.0

- Master Thesis/Research Fellowship, CS Department in Courant

New York, the United States

Sept. 2017 - PRESENT

Beijing University of Posts and Telecommunications

M.ENG. IN ELECTRONIC AND COMMUNICATION ENGINEERING, GPA 85.7/100.0

- Three counts of First Prize, BUPT Academic Scholarship

Beijing, China

Sept. 2014 - Mar. 2017

Beijing University of Posts and Telecommunications

B.ENG. IN COMMUNICATION ENGINEERING, GPA 87.8/100.0

- Three counts of Second Prize, BUPT Scholarship

Beijing, China

Sept. 2010 - Jun. 2014

Honors & Publications& Talks

PUBLICATIONS

A. Li, S. Zhang, D. Wang. Enhanced Neural Machine Translation by Learning from Draft. APSIPA ASC 2017.

A. Li, B. Yang, "A Low-complexity simulation of artificial pitch period detection algorithm", 2013 International Conference on Communication Technology, Volume: 51, (doi: 10.2495/ICCT20130361)

TALKS

June, 2017 **Enhanced Neural Machine Translation by Learning from Draft**, at CSLT, Tsinghua University

Beijing, China

TECHNICAL REPORTS

A. Li, L. Sun, C. Li, Y. Wang, Y. Liu. 360-degree Video Streaming by Deep Reinforcement Learning. November, 2018.

HONORS

2018	M.S. Thesis/Research Fellowship , Computer Science Department	New York, US
2015	26th Place (out of 821 teams participated) (TOP 3%) , KDD Cup 2015	Sydney, Australia
2014 - 2016	Three Counts of First Prize (TOP 30%) , BUPT Academic Scholarship	Beijing, China
2014 - 2016	Three counts of Second Prize (6/400) , BUPT Computer Program Design Contest	Beijing, China
2011 - 2013	Three Counts of Second Prize (TOP 3% - TOP 13%) , BUPT Scholarship	Beijing, China
2012	Merit Student (10%) , Beijing University of Posts and Telecommunications	Beijing, China
2011	Merit Student Leader (5%) , Beijing University of Posts and Telecommunications	Beijing, China

Class Projects

Inferring Age Distribution of Blood Cells by Solving Inverse Problems

New York University

COURSE: MACHINE LEARNING FOR HEALTHCARE

Fall 2018

- Try to infer the age distribution via deconvolving glycation process.
- Methods include constrained optimization and compressed sensing based idea.

Black Box Variational Inference on Latent Dirichlet Allocation

New York University

COURSE: FOUNDATIONS OF MACHINE LEARNING

Fall 2018

- Apply black box variational inference algorithm for Latent Dirichlet Allocation.
- Compare the performance with other inference algorithms.

Inferring age distribution of blood cells

New York University

COURSE: DEEP GENERATIVE MODEL

Spring 2018

- Infer the blood cell age distribution via deconvolving the glycation process.
- Use numerical integral and linear programming.

Supervised Linear Distance Metric Learning with Convex Optimization

New York University

COURSE: CONVEX AND NONSMOOTH OPTIMIZATION

Spring 2018

- Survey the main works in Distance Metric Learning with convex optimization.
- Identify the techniques these work used.
- Compare the general purpose solver CVX with special purpose solver.

Skills

Programming Python (Numpy, TensorFlow, Theano), C/C++, JAVA, JavaScript, PHP, HTML, SQL
Languages Chinese, English
Office \LaTeX , MS Word, MS Excel, MS Powerpoint

Experience

CILVR Lab in New York University advised by Prof. Rajesh Ranganath

New York, USA

GRADUATE RESEARCHER

Sept. 2018 - Present

- Research on Machine Learning for Healthcare
- Infer the age distribution of red blood cells through deconvolving the glycation process, however, with only limited measurements.
- Methods include 1) solve an inverse problem with regularization; 2) use compressed sensing based idea to find the Fourier transformation and then work in frequency domain; 3) employ Gaussian Process to impute missing data.
- Use neural networks to build connections with blood counts and other outcomes like iron deficiency.

NYU video lab in New York University advised by Prof. Yao Wang

New York, USA

GRADUATE RESEARCHER

Jun. 2018 - Present

- Apply deep reinforcement learning techniques in two-tier 360-degree video streaming.
- Used the actor-critic algorithm to train an agent to manage the playback buffers.
- By-passing connections are added on the neural networks, to regularize the model to capture near optimal actions with ease.
- Incorporate the user vision information to help the agent to take better actions.
- Our system improves 18% over the performance of a baseline system. Detailed results are summarized in the corresponding technical report).

Center for Speech and Language Technologies in Tsinghua University (CSLTTHU) advised by Prof. Dong Wang

Beijing, China

RESEARCH INTERN

May 2016 - June 2017

- Reproduced the work neural dialog systems, in both Theano and Tensorflow. Code on Github has received some popularity with several stars and forks.
- Conducted various research in Natural Language Processing.
- Proposed algorithms to enhance the semantic quality of the rare word vectors by 2%.
- Proposed a two-stage translation approach based on the idea of drafting-and-refinement to enhance the Neural Machine Translation by BLEU score 0.9-2.5. The work is published at APSIPA ASC 2017.
- Assigned by Professor Dong Wang to compose chapter 1: *Linear Model* of the book *Modern machine learning techniques*; book in press.
- Did research in translation style transfer. Tried to achieve this by changing the target sentence probability through another language model with a specific style.

Bytedance Technology Co., Ltd.

Beijing, China

DATA ANALYSIS INTERN

Mar. 2016 - Apr. 2016

- Analyzing real-time clickstream data. Did A/B tests to check the performance of every recommendation system.
- Investigated the reason that a particular recommendation strategy is ineffective. Re-weighted recommendation systems to improve user experience.

Pattern Recognition and Intelligent System Lab in BUPT

Beijing, China

RESEARCH INTERN

May 2015 - Apr. 2016

- Following the topic of *KDD Cup 2015*, conducted research on dropout prediction of online courses based on user logs. Did improvement on current data mining algorithm and achieved advancement to TOP 1% compared to KDD Cup 2015.
- Took part in a data mining competition *KDD Cup 2015*. As a team leader, our team conducted statistical methods to solve the issue of online course dropout prediction and ranked TOP 3% (26th out of 821 teams participated).

Pattern Recognition and Intelligent System Lab in BUPT

SOFTWARE ENGINEERING INTERN

- Advertisement Information Extraction:
- Individual project; Crawled data from Internet auto commercials.
- Introduced Naive Bayes Classifier and tf-idf to classify and extract target information. Both the system precision and recall reach over 90%.
- Network Management System:
- In charge of the development of the Alarm Module of a Network Management System that monitors the performance of all equipments through one or more hosts.
- Responsible for the configure of rsyslog and MySQL for Linux. Used PHP, JavaScript, HTML, CSS to develop Web front end and back end.

Beijing, China

Oct. 2014 - Sept. 2015

National Institute of Information Engineering

SOFTWARE ENGINEERING INTERN

- Based on the idea of map and reduce, developed identity verification system for nationwide mobile service providers.
- Covered the entire project from interface to system architecture. Used JSP, JavaScript, HTML, CSS to develop Web front end and back end.
- Large scale and fast processing: was able to verify over sixty million pieces of user information at a time.

Beijing, China

Oct. 2013 - Mar. 2014

Multi-media Technology Research Center in BUPT

RESEARCH INTERN

- Conducted research in Speech Signal Processing. Realized a novel approach to detecting pitch period by reducing algorithm complexity, time consuming and maintaining the accuracy; paper was published on 2013 International Conference on Communication Technology.

Beijing, China

Dec. 2012 - Apr. 2013

Extracurricular Activity

New York University

TEACHING ASSISTANT

- Did TA of the graduate course *Fundamental Algorithms*.
- Grader; Tutor.

New York, US

Fall 2018

Beijing University of Posts and Telecommunications

TEACHING ASSISTANT

- Did TA of the undergraduate course *Data Structure* and *C++ Programming Language*.
- Hosted recitations; Graded assignments; Assisted in labs.

Beijing, China

Sept. 2014 - Jun. 2015

Soong Ching Ling Memorial Residence

VOLUNTEER

- Helped maintain sightseeing order; stopped uncivilized behavior; helped the disabled.
- Introduced residence and exhibition of personal history to customers as a volunteer tour guide.

Beijing, China

Jun. 2012 - Jun. 2013

University Student Union

MINISTER OF THE DEPARTMENT OF STUDENT CULTURE PROMOTION

- Planed series of lectures on campus by inviting celebrities.
- Coordinated with other universities in Beijing about culture related functions.
- Established a platform to share functions' information with students across all universities participated.

Beijing, China

Sept. 2011 - Jun. 2012