Aodong **Li**

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Education

New York University *New York, the United States*

M.S. IN COMPUTER SCIENCE, GPA 3.95/4.0 *Sept. 2017 - PRESENT*
- Master Thesis/Research Fellowship, CS Department in Courant

Beijing University of Posts and Telecommunications *Beijing, China*

M.ENG. IN ELECTRONIC AND COMMUNICATION ENGINEERING, GPA 85.7/100.0 *Sept. 2014 - Mar. 2017*
- Three counts of First Prize, BUPT Academic Scholarship

Beijing University of Posts and Telecommunications *Beijing, China*

B.ENG. IN COMMUNICATION ENGINEERING, GPA 87.8/100.0 *Sept. 2010 - Jun. 2014*
- Three counts of Second Prize, BUPT Scholarship

Honors & Publications

PUBLICATIONS

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

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*

Course 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 from a convolutional 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*
- Inferred the blood cell age distribution via the interplay of glucose concentration and HbA1c measurements.
- Used numerical integral and linear programming.

Supervised Linear Distance Metric Learning with Convex Optimization *New York University*

COURSE: CONVEX AND NONSMOOTH OPTIMIZATION *Spring 2018*
- Surveyed the main works in Distance Metric Learning with convex optimization.
- Identified the techniques these work used.
- Compared 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	MS Word, MS Excel, MS Powerpoint, LaTeX

Experience

Research on Machine Learning for Healthcare in New York University advised by Prof. Rajesh Ranganath

RESEARCH INTERN

New York, USA

Sept. 2018 - now

- Try to infer the age distribution from a convolutional glycation process.
- Methods include solving inverse problems via constrained optimization and compressed sensing based idea.
- Try to build connections with blood counts and other outcomes like iron deficiency.

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

RESEARCH INTERN

New York, USA

Jun. 2018 - now

- Applied deep reinforcement learning techniques in two-tier 360-degree video streaming in collaboration with another PhD candidate, Liyang Sun.
- My responsibility includes analyzing model rewards and environment settings and coding the model in TensorFlow.
- We showed that by carefully setting rewards, the model can make approximately optimal decisions (we know the optimal solutions for some situations) even though the model needs to make challenging decisions for two separate video buffers.
- We compared our proposed model with a baseline model, and experiments showed a consistent positive improvement by 18% over the baseline. Temporary results are summarized in technical report 360-degree Video Streaming by Deep Reinforcement Learning.

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

RESEARCH INTERN

Beijing, China

Apr. 2016 - Jan. 2017

- Proposed algorithms to enhance the characteristic semantic quality of the rare word vectors in Natural Language Processing by 2%.
- Proposed a new model to enhance the Neural Machine Translation by BLEU 0.9-2.5 and the research result is presented in the paper "*Enhanced Neural Machine Translation by Learning from Draft*".
- Assigned by Professor Dong Wang to compose chapter 1: *Linear Model* of the book *Modern machine learning techniques*; book in press.
- Did literature review on Neural Machine Translation.

Beijing Bytedance Technology Co., Ltd.

DATA ANALYSIS INTERN

Beijing, China

Mar. 2016 - Apr. 2016

- Did statistics of the performance of every recommendation system. Investigated the reason that a particular recommendation strategy is ineffective. Re-weighed each recommendation system to improve user experience.

Pattern Recognition Lab in BUPT

RESEARCH INTERN

Beijing, China

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 Lab in BUPT

SOFTWARE DEVELOPMENT INTERN

Beijing, China

Oct. 2014 - Dec. 2014

- Individual project; Extracted data feed from web-based classified auto commercials.
- Introduced Naive Bayes Classifier and tf-idf to classify and extract target information. The system precision and recall both reach over 90%.

Pattern Recognition Lab in BUPT

SOFTWARE DEVELOPMENT INTERN

Beijing, China

Mar. 2014 - Sept. 2015

- 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.

National Institute of Information Engineering

Beijing, China

SOFTWARE DEVELOPMENT INTERN

Oct. 2013 - Mar. 2014

- Participated in the development of the pilot system of real name verification used in telecommunication service providers with Web Services. Covered the entire project from interface, system architecture, huge data (over 5M) processing and testing rules. Used JSP, JavaScript, HTML, CSS to develop Web front end and back end.
- Introduced novel ideas in database module by using hash in JAVA so that the time requirement was significantly reduced.

Multi-media Technology Research Center in BUPT

Beijing, China

RESEARCH INTERN

Dec. 2012 - Apr. 2013

- 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 2014 International Conference on Communication Technology.

Extracurricular Activity

New York University

New York, US

TEACHING ASSISTANT

Fall 2018

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

Beijing University of Posts and Telecommunications

Beijing, China

TEACHING ASSISTANT

Sept. 2014 - Jun.2015

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

Soong Ching Ling Memorial Residence

Beijing, China

VOLUNTEER

Jun. 2012 - Jun. 2013

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

University Student Union

Beijing, China

MINISTER OF THE DEPARTMENT OF STUDENT CULTURE PROMOTION

Sept. 2011 - Jun. 2012

- 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.