Xide Xia

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EDUCATION

Boston University
Ph.D. candidate in Computer Science
Advisor: Professor Brian Kulis

Sept 2016 - Present
Boston, MA

Harvard University, Institute for Applied Computational Science
M.E. in Computational Science and Engineering

Sept 2014 – May 2016
Cambridge, MA

Brown University, School of Engineering
M.S. in Electrical Science

Sept 2012 – Dec 2013
Providence, RI

Beijing Institute of Technology, College of Information and Electronics
B.S. in Electrical and Information Engineering

Sept 2008 – May 2012
Beijing, China

RESEARCH INTERESTS

Machine Learning, Deep Learning, Image Segmentation, Representation Learning, Computer Vision, Data Mining

RESEARCH EXPERIENCE

Boston University, Boston, MA

Convolutional Neural Networks for Unsupervised Image Segmentation   May 2017 – Present
Research advised by Professor Brian Kulis.
• Design an end-to-end Convolutional Neural Network Architecture for fully-unsupervised image segmentation.

Efficient Deep Generative Models for Unsupervised Representation Learning   Oct 2016 – May 2017
Research advised by Professor Brian Kulis.
• Learn the underlying lower-dimensional representation for input image data on the hidden layer.
• Train a deep generative model for the purpose of unsupervised clustering task in the hidden space.

Age and Gender Prediction on Twitter Users   Feb 2017 – July 2017
Research Assistant advised by Professor Margrit Betke, Image and Video Computing (IVC) Lab.
• Design a Convolutional Neural Network (CNN) model to make Age/ gender/ ethnicity prediction on the data of Twitter users profile images.

Harvard Medical School, Boston, MA

Computational prediction of protein-DNA interactions based on sequences information.   Aug 2013 – May 2016
Graduate Research Fellow at Department of Systems Biology
• Develop a new computational method for predicting protein-DNA interactions.
• Implement large-scale scientific computing in parallel and distributed environments.

Harvard University, Cambridge, MA

Intervention and Outcome Predictions in the ICU   Dec 2015 – May 2016
Research advised by Professor Finale Doshi-Velez.
• Design a recurrent neural network (RNN) model to simulate multidimensional physiological time series of patients during vasopressor administration.

Batch Mode Active Learning and Its Application to Astronomy   Feb 2015 – Nov 2015
M.E. Thesis advised by Professor Finale Doshi-Velez and Dr. Pavlos Protopapas.
• Developed a batch-mode cost-sensitive active learning approach that not only exploited uncertainty and representativeness of the whole unlabeled dataset but also took annotation cost into consideration.
• Designed a selection criterion that combined uncertainty and representativeness by using a synthesized heuristic argument.
• Applied the approach to optimize astronomical observations for object classification.

WORK EXPERIENCE

Boston University, Boston, MA   Sept 2016 – Present
Research Assistant

Harvard Medical School, Boston, MA   Aug 2013 – May 2016
Research Fellow at Department of Systems Biology

Agilent Technologies Co., Ltd, Beijing, China   Sept 2011- Jan 2012
Undergraduate intern at mobile broadband division

PUBLICATION

[P.2] Xide Xia, Finale Doshi-Velez, Pavlos Protopapas. "Cost-Sensitive Batch Mode Active learning: Designing Astronomical Observation by Optimizing Telescope Time and Telescope Choice." In In Proceedings of SIAM Data Mining Conference (SDM). 2016.

[P.1] AlQuraishi, M., Tang, S., Xia, X. "An affinity-structure database of helix-turn-helix: DNA complexes with a universal coordinate system." BMC Bioinformatics, 16(1), 390. PMID:26586237. (Database: http://staging.proteindna.hms.harvard.edu/)).

TEACHING EXPERIENCE

Boston University   Boston, MA
• CS131 Combinatoric Structures, 2016 Fall

Harvard University   Cambridge, MA
• AM207 Stochastic Methods for Data Analysis, Inference, and Optimization, 2016 Spring

HONORS & AWARDS

2017
• Dean's Fellow Scholarship (Boston University, Boston, MA)
• CRA-Women Graduate Cohort Workshop Student Award

2016
• Harvard IACS Student Scholarship (Harvard University, Cambridge, MA)
• SDM Student Award

Before 2016
• Research Fellowship (2013-2016, Harvard Medical School, Cambridge, MA)
• Ren-Min Scholarship (2008-2012, Beijing Institute of Technology, Beijing, China)

TECHNICAL STRENGTHS

Proficient in programming languages: Python, Matlab, C/C++
Familiar with deep learning packages: Tensorflow, Keras, Caffe