HUAZHE XU

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EDUCATION

Tsinghua University — Beijing, China
B.E. in Electronics Engineering — Aug 2012 – June 2016(Expected)
- **GPA**: 93.0/100
- **Average of Math-related Courses:** 95.4/100
- **Ranking:** 5/238 (2%)

University of Toronto — Toronto, Canada
Exchange student in School of Electrical and Computer Engineering — Sept 2014 – Dec 2014
- **GPA:**4.0/4.0, straight A+
- **Top 1** in computer vision class

University of California, Berkeley — Berkeley, USA
Undergraduate Visiting Research Assistant — Jul 2015 – Sept 2015
- Undergraduate visiting research assistant in Department of Electrical Engineering and Computer Science
- Undergraduate visiting research assistant in International Computer Science Institute(ICSI)

PUBLICATIONS/ PRE-PRINTS/ACADEMIC EVENTS

[1] **H. Xu**, J. Feng, T. Darrell, Weakly Supervised Deep Scene Parsing with Attributes, submitted to CVPR'16
[2] R. Hu, **H. Xu**, M. Rohrbach, J. Feng, K. Saenko, T. Darrell, Natural Language Object Retrieval. in arXiv preprint arXiv:1511.04164, 2015. submitted to CVPR'16 [pdf]
[3] Marcus Rohrbach, Jacob Andreas, Trevor Darrell, Jiashi Feng, Lisa Anne Hendricks, Dan Klein, Ronghang Hu, Raymond Mooney, Anna Rohrbach, Kate Saenko, Bernt Schiele, Subhashini Venugopalan, **Huazhe Xu**, Relating Natural Language and Visual Recognition, presentation and a poster at Closing the Loop between Language and Vision Workshop at ICCV'15, participated in organizing the ICCV'15 workshop on vision and language
[4] Tian Xie, Qian Han, **Huazhe Xu**, *et al*. A Low-Complexity Linear Precoding Scheme Based on SOR Method for Massive MIMO Systems, in 2015 IEEE 81st Vehicular Technology Conference (VTC Spring), May 2015

RESEARCH EXPERIENCE

University of California, Berkeley (Department of Computer Science) — Berkeley, USA
Research Assistant to Professor Trevor Darrell and Professor Jiashi Feng — July 2015 – Present
Fully Convolutional Neural Network: Deep Scene Parsing
- Proposed and developed a mutually boosted fully convolutional net model, to improve the performance of semantic scene parsing
- Converted the conventional hard-to-solve training problem into biconvex optimization problem in order to generate dense pixel-wise labels of images with both category and attribute names
- Surpassed the state-of-the-art result in scene parsing on three datasets
- "Weakly Supervised Deep Scene Parsing with Attributes" submitted to Conference on Computer Vision and Pattern Recognition (**CVPR**) 2016

RNN- and LRCN-based Object Retrieval upon Natural Language Query
- Designed a RNN-based framework to retrieved described objects in image
- Implemented a framework which could back propagate to the next time slot and deal with contextual information
- Trained neural network with data from Refer-It-Game with spatial configuration and context
- Solved the problem that limited data was provided for retrieval by transferring knowledge from captioning domain
- "Natural Language Object Retrieval" submitted to Conference on Computer Vision and Pattern Recognition (**CVPR**) 2016

University of Toronto (Department of Computer Science) — Toronto, Canada
Research Assistant to Professor Sanja Fidler and Professor Raquel Urtasun — Sept 2014 – March 2015
Context Image Understanding and Human Taste Analysis with Natural Language Information
- Designed a ranking system to recommend cars according to personal visual preference
- Created a framework for natural language parsing with three objectives: to attain the sentiment of texts, interpret the effect of specific parts of speech, and resolve co-reference resolution.
- Crawled for data online to make test dataset, applied neural net to extract features
- Developed appropriate algorithm to build a recommendation system combined with traditional collaborative filtering and direct probabilistic factorization

University of Texas, San Antonio (Department of Computer Science)   San Antonio, USA
Research Assistant to Professor Qi Tian, University of Texas, San Antonio, IEEE Fellow   Oct 2015 – Present
- Conducted Deep ConvNet and index embedding to improve Image Retrieval Accuracy
- Conducted system to provide new representations of images including traditional SIFT and deep features which reduces the computational cost for image search significantly
- Combined SIFT-based index with CNN index from the perspective of index optimization

Tsinghua University (Department of Electronic Engineering)   Beijing, China
Research Assistant to Professor Shengjin Wang, Head of Intelligent Image and Text Lab   Dec 2014 – May 2015
Pedestrian Re-Identification with Deep Decomposition
- Developed method to evaluate re-identification accuracy inspired by Image Search Method
- Modeled video background with reformed Gaussian Mixture Modeling Method to enhance foreground extraction
- Segmented pedestrians into parts on VIPeR dataset and Market-1501 dataset for use as data inputs

Tsinghua University (Department of Electronic Engineering)   Beijing, China
Research Assistant to Professor Linglong Dai   Jan 2014 – Oct 2014
Undergraduate research on 5G wireless communication-OFDM pilot contamination
- Created models on low complexity precoding scheme for Massive MIMO in 5G System
- Reduced the computational complexity by implementing optimization algorithms
- Paper A Low-Complexity Linear Precoding Scheme Based on SOR Method for Massive MIMO Systems accepted by **IEEE VTC 2015**

SELECTED AWARDS AND HONORS

• Annual Academic Excellent Award (~2% in 238)	2015
• Annual Academic Excellent Award (~2% in 280)	2014
• Annual Comprehensive Excellent Award(~2% in 280)	2013
• First Prize in National "Duishi" Programming Contest hosted by Tsinghua(2/300)	2012
• First Prize in Chinese Undergraduate Students' Physics Competition(top 1%)	2013
• First Prize of National Olympiad in Physics Competition, Jilin Province(7/3729)	2009

WORK EXPERIENCE

Microsoft Research Asia   Beijing, China
Developer, Kinect Team   July 2014 – Sept 2014
- Develop an athletic simulating software upon Kinect in order to assist people doing exercise in C#
- Final product was awarded as second prize out of 16 well-designed products

Stocki Internet Finance Program   Beijing, China
Co-founder, Chief Engineer,   May 2014 – Present
- This is a startup company helping people do investment on stocks we are running with partners under the direct of our mentor, Chief Investment Officer in Yingfeng Capital
- Developed demo of Stocki in both PC end and Mac end in Python and Java
- Collaborate with Qidi Investment, which manages around 1 billion RMB

ADDITIONAL INFORMATION

- <u>Select extracurricular activities</u>: Vice President of Piano Club (Sept 2013 – Sept 2014), Tsinghua Piano Club
- <u>Interests:</u> Enjoy playing the piano (started from four)
- <u>Programming Skills</u>: Proficient in Matlab, C, Python, C++, PHP, HTML
- <u>Languages</u>: Mandarin Chinese (native), English (fluent)