Zhaocheng (Michael) ZHU

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EDUCATION

School of Electronic Engineering and Computer Science, Peking University *Sep. 2014 - Now*

Major: Computer Science

GPA: 3.84 / 4.0, ranked 16 of 192 (major); 3.65 / 4.0, ranked 30 of 192 (cumulative)

2016 school year-now: Top talent class of EECS (30 of 320)
2015-2016 school year: Peking University Kwang-Hua Scholarship
2015-2016 school year: Peking University outstanding research award
2014-2015 school year: Peking University Tung OOCL Scholarship
2014-2015 school year: Peking University merit student

RESEARCH EXPERIENCE

Internship at Microsoft Research Asia *Sep. 2017 - Now*

Advisor: Dr. Jifeng Dai (Lead Researcher)

- Video object detection with optical flow and temporal context
  Improved previous works of this group for better detection precision and less inference time
  Customized GPU operators and reproduced FlowNet (optical flow) in MXNet

Internship at Machine Learning Department, Carnegie Mellon University *July 2017 - Sep. 2017*

Advisor: Prof. Pradeep Ravikumar

- Stacked local explanations for deep neural networks
  Reviewed existing approaches to instance-based explanations on general machine learning schemas
  Proposed and evaluated stacked linear models in explaining the behavior of convolutional neural networks on any given instance

Institute of Computational Linguistics, Peking University *Sep. 2015 - Sep. 2017*

Advisor: Prof. Junfeng Hu

- Paragraph embedding with priori from hierarchical topic *Oct. 2015 - May 2016*
- Perturbation on recurrent neural networks in semantic classification *Sep. 2016 - Mar. 2017*
  Discovered that character-level perturbation is related to partial meaning words in Chinese
- Context aware document embedding *Mar. 2017 - July 2017*
  Improved document embedding with word weights generated from perturbation in contextual recurrent / convolutional neural networks
  ***Zhu, Z.**, & Hu, J. (2017). Context Aware Document Embedding. arXiv preprint arXiv:1707.01521.*

Internship at Mitsubishi Information Technology R&D Center (Japan) *July 2016 - Aug. 2016*

- Dialog State Tracking Challenge (DSTC 5)
  *Hori, T.; Wang, H.; Hori, C.; Watanabe, S.; Harsham, B.A.; Le Roux, J.; Hershey, J.R.; Koji, Y.; Jing, Y.; **Zhu, Z.** & Aikawa, T. (2016). Dialog state tracking with attention-based sequence-to-sequence learning. In 2016 IEEE Spoken Language Technology Workshop, SLT (pp. 13-16).*
- Developed a multi-label classifier for Chinese intention understanding

OTHER EXPERIENCE

Youth Amateur's Society of Photography, Peking University *Sep. 2014 - Now*

- Severed as the leader of story portrait group *Apr. 2015 - Aug. 2017*
- Severed as the league branch secretary of the society *Sep. 2017 - Now*

Debate team of EECS, Peking University *Sep. 2014 - June. 2015*

- Played on the offensive position in the team
- Group Champion in PKU Debate Competition for freshmen in 2014

Stanford TreeHacks *Feb. 2016*

- Designed and developed a web application for automatic photo toning (leader of team of 4)

HackPKU *Apr. 2016*

- Member of the planning group & news team

Mathematical Contest in Modeling (MCM 2015) *Jan. 2015*

- Designed several models for solving the distribution strategy of Ebola medicine
- Honorable mention

ACM SIGMOD Programming Contest 2017 *Mar. 2017*

- Dynamic N-gram dictionary matching (team of 3)
- 11 out of 39 teams

SELECTED COURSE PROJECTS

Introduction to computer system (CMU 15-213 ICS) *Sep. 2015 - Jan. 2016*

- Several basic labs at computer system level including
  buffer overflow attack, cache-friendly programming, memory allocator, proxy, etc.

Lab on operating systems (MIT 6.828 JOS, graduate course) *Sep. 2016 - Jan. 2017*

- Implemented a linux-like operating system with functions of
  boot, memory management, context switch, multi-processor, file system, shell, etc.

Compiler development *Sep. 2016 - Jan. 2017*

- Designed and implemented an object-oriented language for music composition (team of 2)

WeChat forward path tracking *June 2017*

- Implemented a dynamic public page that tracks forward path with official APIs (team of 4)

Zip project *Apr. 2015 - May 2015*

- Implemented LZ77 and LZW algorithms

Cell counting *Dec. 2014 - Jan.2015*

- Implemented a convolution neural network detector with sliding-window mechanism

Linux web development *May 2015 - June 2015*

- Designed and implemented web pages for data structure and algorithm demos with animation

Microcomputer lab *May 2016 - June 2016*

- Designed and implemented a game with device input and VGA graphic output in DOS

Trigger extraction *June 2016*

- Implemented a detector extracting trigger words by softmax classifier and word2vec

Question answer (QA) system *Nov. 2016 - Dec. 2016*

- Designed and implemented a rule-based QA system with limited training data (team of 2)

SKILLS AND INTERESTS

- Master in: C/C++, Python/Cython, Pascal/Delphi, Photoshop
- Familiar with: Matlab, CUDA, SQL, Assembly, Bash
- Skilled in: data structure & algorithm design, algorithm analysis & optimization
- Language skills: GRE 322/340 (AW 3.5), TOEFL 102/120 (Speaking 22)

Photography: skilled in landscape and humanistic photography, and expert in photo retouching

Sports: table tennis, swimming

Music: Piano with grade 7 of 10, Percussion with grade 3 of 10, interested in music compiling