JASON ZHICHENG DING

http://zhichenglab.co/
zd2212@columbia.edu
(646)575-6045

EDUCATION

Columbia University — New York, NY
M.S in Computer Science — Expected May 2019

South China Normal University — Guangzhou, CN
B.S. in Electronic Information Engineering, GPA: 3.47/5.00 (Top 3%), Dean's List — 2016

RESEARCH EXPERIENCE

Columbia University, Center for Computational Learning System (CCLS) — New York, NY
Research Assistant — Jan 2018 - Present

- Task: use LSTM and MC dropout to predict the next 24 hours floor temperature.
- Discovered weekly, monthly, seasonal pattern of the floor temperature. The RMSE of next 24 hours prediction reaches to 1.02 ± 0.09, compared to a vanilla LSTM neural network, our approach improve 25%.

South China Normal University, South China Academy of Advanced Optoelectronics — Guangzhou, CN
Research Assistant — Aug 2014 - Jan 2016

- Task: design an efficient way to build an automated Internet of Things (IoT) system for lab management.
- Designed anti-theft system, toxic detection, auto-cooling system in twenty lab. By 2018, the system has alerted and reduced the loss of 138 accidents.

PROFESSIONAL EXPERIENCE

WellAV Technologies — Huizhou, CN
Software Engineer — Mar 2016 - Jul 2017

- Developed controller board (C++) and compiling system (Python) for new 4K UHD product.
- Optimized compiling system in build server: in average, shorten build time from 27hrs to 5hrs (Python).

Ericsson — Guangzhou, CN
Software Development Engineer (Intern) — Jul 2015 - Dec 2015

- Participated in the development of Test-Automation system based on deep learning: responsible to test report analysis and generation based on deep learning.
- This automated testing system has saved QA team for about 10000 man-hours by 07/2017.

PROJECT EXPERIENCE

Million Sound Release Date Prediction — Mar 2018 - Apr 2018

- Task: predicted the release date of million song in the dataset.
- Selected the important twenty features with XGBoost and developed a deep neural network with 30 -100 hidden layers. Finally utilize extreme random forest to enhance the prediction. The MAE of this system is 1.27.

Online PDF Reader Controlled by Gesture — Feb 2018 - Apr 2018

- Task: controlling the PDF reader on switching pages, zoom in/out via body/finger gesture.
- Developed a real time gesture recognition system which can reach 30 fps on camera capturing and the accuracy of controlling reach 92.3%.

Pollution Prediction — Dec 2017 - Jan 2018

- Task: predicted the PM 2.5 of Beijing using large scale time serial.
- Selected the most important ten features with XGBoost. Then use LSTM layers to develop time series forecasting models. The RMSE of this system is 21.58, an 13.68% improvement on the best result in the Kaggle Leader-boarder.

Stock Prediction — Aug 2017 - Oct 2017

- Task: developed robustness stock prediction system.
- Used the latest four years stock data and select the important features with XGBoost. Deploy the LSTM layer in deep reinforcement learning system.

A real time objects detection in cell phone camera base on MobileNets Jun 2017 - Aug 2017

- Task: developed an real time objects detection system that could deploy in cell phone camera.
- Implemented the state-of-art MobileNets. Then deployed model in cell phone camera application. The model fixes 30 fps and recognizes 35 outdoor objects: car, people, dog, tree, chair, etc. The accuracy is 92.3%.

Moving Object Tracking and Detecting Mar 2015 - May 2016

- Task: developed system on tracking and detecting moving objects.
- Proposed an algorithm, which shortened computing time by 9.6% and increase the recognition accuracy by 17.2%, comparing to Lucas-Kanade Optical Flow algorithm.

Intelligent Traffic Control Glove Jul 2014 - Dec 2014

- Task: develop an glove which recognize traffic control officer's gesture and show the meaning of drivers.
- Developed the glove by using angle and acceleration sensor to detect traffic control officer's gesture. Then label and feed the data to the deep learning system. The accuracy of this system is 98.4%.

Publication

1. Publication: Weipeng Hu, Zhihua Li, Zhicheng Ding. Traffic Emergency Guidance Gloves Based on ZigBee. Engineering Technology. 2015, 0 (8); 109-109.

Patents

1. Bin Zhou, Zhicheng Ding, Chibin Kong, Changtao Lu, Sailing He. A Field Early-warning Wireless Monitoring System based on Fiber Grating Sensor. Patent Number: ZL. 2015 2 0015530.3. Issued date: 2015.05.20.
2. Weipeng Hu, Zhicheng Ding. The Fractal Algorithm and Fractal Tree Software based on VC++ MFC. Patent Number: 2015SR156686. Issued date: 2015-08-13.

Skills

- Programming: Python (advanced), C/C++ (advanced), Algorithm (fluent), Matlab (Familiar)
- Machine Learning: Transfer Learning, Reinforcement Learning, Generate Adversarial Network, Computer Vision, Natural Language Processing, Pattern Recognition.