HUITING LIU

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EDUCATION

Carnegie Mellon University, School of Computer Science Pittsburgh, PA
Master of Computational Data Science *Dec. 2017*

- Completed Courses: Introduction to Computer Systems, Machine Learning, Machine Learning with Large Dataset, Natural Language Processing, Distributed System.
- Overall GPA: 3.53/4

Beijing University of Posts and Telecommunications (BUPT) Beijing, China
B.E. in Computer Science and Technology *Jun. 2012*

- Outstanding Graduates, Beijing Municipal Education Commission, 2012.
- Outstanding Innovation Project Award, 2011, NAPT66 Project (https://github.com/mzweilin/napt66)
- First-Class Scholarship

SKILL

Programming Languages	Python, C/C++, PHP, Go, Java, Shell, HTML5, CSS
Databases	MySQL, PostgreSQL, Redis, MongoDB
Tools	SVN, Git, Vim, Hadoop, Spark, AWS, MXNet

SELECTED GRADUATE RESEARCH AND COURSE PROJECTS

Amazon Alexa Prize Competition Nov. 2016 - Nov. 2017
Role: Team Leader, Team Size: 6, Advisor: Alexander I. Rudnicky

- Led the team to finish the whole application process, including idea discussion, technological investigation, proposal design, and to become an officially sponsored team with $100,000 stipends.
- Developing the core module, which combines topic model and deep learning model (GANs + LSTM) to generate reasonable responses and maintain the conversation.
- Directing the project development, team cooperation, and regular communication with Alexa organization to ensure the project delivery.

Automatic Reverse-Mode Differentiation in Deep Learning Nov. 2016

- Implemented two neural network architectures: Multilayer Perceptron (MLP), and A Long Short Term Memory Network (LSTM) in python from scratch.
- Applied both architectures in a character level entity classification and achieved good performances.
- Completed the basic math functions including ReLU, sigmoid, tanh, softmax and cross-entropy, and their related gradient derivations to generate the Wengert list in an auto differentiation process.

Distributed Bitcoin Miner Simulator Oct. 2016

- Implemented a Live Sequence Protocol (LSP) in Go without locks and mutexes to provides reliable communication with client-server APIs.
- Developed a Distributed Bitcoin Miner Simulator with high performance based on the LSP.
- Designed the system with considerations including failure tolerance, network stability, data consistency, and concurrency.

WORK EXPERIENCE

Baidu Co., Ltd (NASDAQ:BIDU) Beijing, China

Software Engineer *Jul. 2012 - Mar. 2015*

· Special Contribution Award (for providing technical guidance to new employees), Baidu Institute of Technology

Real-time auto Q&A System for Zuoye Bang, an Educational Mobile Application

· Built a distributed search engine to provide similar results for the Q&A service, which covered billion data and supported real-time index update.
· Introduced text trunk analysis, part-of-speech tagging, named entity recognition and other features to improve the similarity calculation in the ranking module. The new features improved the ranking accuracy over 20%.
· Baidu had demerged this product into a new company assessed at one hundred million dollars. Now, Zuoye Bang is the leading mobile educational product in the Chinese market.

Professional Q&A Platform in Healthcare

· Actively participated in the market analysis, user requirement investigation, product discussion, and technical design. Played as a key role to connect the product team and the engineering team.
· Acted as one of the lead engineers to direct the team to construct the platform by PHP and MySQL in one month. Set checkpoints and daily review to ensure that the project was under control.
· Worked with teammates to implement a classification module to classify questions into different categories based accumulated medical data.

Related Questions Recommendation System with Multi-engine

· Abstracted the recommendation model as a graphical network connected by user behavior and implemented a new recommendation engine to improve the diversity and quality.
· Designed a multi-level index structure to store 1 billion nodes in the graph and an algorithm to perform great efficiency in searching the recommendation candidates.
· The new engine increased the click rate by 7% which was evaluated by an AB test.

Online Shopping Search Engine

· Took over the search service from a senior engineer and got familiar with the system within a week.
· Added new strategies, including text trunk analysis, intention analysis, and characteristic term matching, to improve the search results of two hundred million commodities.
· Designed a mechanism to collect train data from user behavior for a SVM query classification model so that the accuracy of the classification service was kept improving with regular retrain process. The mechanism improved the search recall rate by nearly 10% after one month.

Software Engineer Intern *Jul. 2011 - Jul. 2012*

· Innovation Award, Knowledge Search Department of Baidu

Web App Performance Monitoring System

· Processed and analyzed the log data of millions of web Apps with Hive and Hadoop.
· Stored the data with distributed database system to get mass storage and high performance.
· Visualized the performance data of web Apps in different dimensions for convenient viewing.
· Developed the system based on the MVC framework model to achieve a clear structure.