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Personal statement

In Fall 2016, I was enrolled into the PhD program of Computer Science in Ohio University. In the meantime, I am a second-year candidate of Master of Mathematics (Computer Science track) in the same university. My last degree was Master of Science in Engineering (Physical Electronics) from Huazhong University of Science and Technology in China, which was conferred more than 10 years ago. After graduation, I entered the software industry. As a seasoned software engineer, I had 10 years' successful experience, working for 9Spaces and SAS successively.

Academic projecets

Final Project of Natural Language Processing, Spring 2016

Title: Acquisition of Topic Signatures with Hypothesis Tests Based on Word Embedding
Description: A topic signature is a vector of terms associated with a topic. In this project, a class of adapted hypothesis tests, which leverage on semantic information provided by word embedding, is presented. Taking self-categorized document sets extracted from Wikipedia as the corpus, topic signatures are acquired with the adatpted hypothesis tests for each category of documents. For each topic signature, both the terms computed by the adatptions and that computed by original hypothesis tests are searched as keywords in the corpus through Lucene. $F_{0.5}$-scores for the two groups of searches are compared to evaluate the adaptions. The results illustrate that $F_{0.5}$-scores are improved significantly by the adapted hypothesis tests due to its high precision, which indicates that the adaptions at least partly resolve the noise issue by fully exploiting semantic information.

Final Project of Machine Learning course, Fall 2016

Title: Classification of Alzheimer's Disease and Normal Congnitive Status with Recurrent Neural Networks in Resting State fMRI
Description: A deep learning framework is designed providing assist to the diagnosis of Alzheimer Disease (AD). The framework is a combinatiion of Deep Auto-Encoder (DAE) and Recurrent Neural Networks (CNN). Initially, the resting-state functional Magnetic Resonance Imaging (rs-fMRI) images data is preprocessed and mean time series of Regions of Interest (ROIs) are extracted. Then high-dimensional time-series is reduced to a lower dimensionality by a DAE, which in succession is splitted into multiple identical sized sub-series. Then a RNN classifier is trained on the sub-series classifying

each of them as either AD or Normal healthy Control (NC). Finally, the diagnosis suggestion of a subject is made by ensemble of the outputs of the sub-series classifiers. Results shows the framework fails to generalize the trained model to the test data set. After analysis, we conclude that the preprocessed rs-fMRI time-series data cannot be taken to classify the Alzheimer Disease.

Work history

Technical Lead, Data Visualization Group of SAS Institute, Beijing
April 2015 – July 2015

My role involves leading a team developing and maintaining SAS BI Dashboard.

UI Common Component Developer, HTML5 Group of SAS Institute, Beijing
September 2013 – March 2015

As a core team member, I am focusing on the development of Form Control Component.

Form Control, a major HTML5 component in SAS, is designed to collect user-input values. Based on a data model, it generates various UI controls and organizes them into hierarchical forms.

Strengths and achievements:

- Overall object-oriented design of Form Control to meet the requirements, in the meantime considering the extension to Property Sheet, another major SAS HTML5 component.
- Designed and implemented fundamental features of Form Control, including but not limited to responsive web solution, data model and binding and transparent group.
- Fixed most of obstructive bugs.
- Developed other miscellaneous HTML5 components.

The essential supports I provided were crucial to its successful releases. And I was also promoted to a lead position due to my significant contributions to it.

Software Engineer, Business Intelligence Group of SAS Institute, Beijing
September 2013 – March 2015

Business Intelligence (BI) Group was responsible for the plugin development of SAS Environment Manager (EV) and SAS Visual Data Builder (VDB).

Strengths and achievements:

- Solved a long blocking bug of Data Spreadsheet, with that safe guarded *File Importer* project for the team and then winning the 3C (Collaboration, Communication and

Consistency) Award of SAS 2012.
- Set up the prototype of *File Importer* and led the development of it technically.
- To fix some long-standing bugs, rewrote library plugin of EV.

Team Lead and Softwar Engineer, 9Spaces Inc., Beijing and Guangzhou
September 2005 – August 2011

I was focusing on an outsourcing project, whose owner was one of 9Spaces' strategic partners from May 2008 to August 2011.

My responsibilities included designing and implementing applications, collaborating with remote team members to ensure on-time release of high-quality code and project deliverables.

From September 2005 to May 2008, I participated each phase of design and development of 9Spaces.com. In the second half of 2007, I started to lead a team working on payscale.cn, Chinese version of famous salary survey website payscale.com.

Skills and abilities

[Development Environment]
- Unix, Linux
- Windows

[Programming]
- Python
- Java (Java EE, Spring, Lucene, GWT, Heritrix, IBatis etc)
- Javascript (JQuery, Dojo, OpenUI5)
- Actionscript (Flex)
- Ruby

[Data Science]
- Deep Learning
- SAS
- Machine Learning
- Natural Language Processing

[Software Engineering]
- Object-oriented Analysis and Design (OOAD)
- Project management and agile development (Scrum)

Education

Doctor of Computer Science and Master of Mathematics

Ohio University, Spring 2016 - Now

Course list (GPA 3.934):

Computational Theory
Operating System
Natural Language Processing
Machine Learning
Advanced Image Analysis

Master of Science in Engineering, Physical Electronics
Huazhong University of Science and Technology, September 2002 – June 2005

Bachelor of Engineering, Optoelectronics
China Jiliang University, September 1998 – June 2002

Literature

Sun, T., Zhu, D., Yang, Z., Liu, Z., & Liu, Y. (2006). Theoretical predictions of photonic properties of nanoporous copolymer films as photonic band gap materials using FDTD. *Applied Physics B*, *82*(1), 89-92.

Sun, T., Zhu, D., Yang, Z., Liu, Y., & Wu, F. (2005, January). Analysis of optical waveguiding properties of self-assembled block copolymer films using FDTD method. In *Asia-Pacific Optical Communications* (pp. 208-214). International Society for Optics and Photonics.

Wu, F., Zhu, D., & Sun, T. (2005, January). Analysis and design of low chromatic dispersion in flat-top AWG with parabolic waveguide horn. In *Asia-Pacific Optical Communications* (pp. 605-611). International Society for Optics and Photonics.

Certifications

Machine Learning
Coursera.org
March 2014 – May 2014

Awards

SAS 2012 3C (Collaboration, Communication and Consistency) Award
December 2012