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Penghao He

EDUCATION

Apr.2019 **MSI, University of Michigan School of Information** 3.9/4.0

Jun. 2017 **School of Electronics and Information Technology, Sun Yat-Sen University (SYSU)**
Bachelor of Engineering in *Electrical Engineering* 3.8/4.0

TECHNICAL SKILLS

Language: C++, Python, R, Matlab, SQL, STATA, SPS, HTML/CSS/JavaScript, Excel, Latex
Skills: Natural Language Processing, Machine Learning, Convolutional Network, Memory Network, R Package, OpenCV, Scikit-learn, Pandas, Seaborn, Numpy, Scipy, Tensorflow

PROJECT

Ongoing **LifeQA: Holistic Visual-Linguistic Scene Understanding for Real-Life Question Answering**

- Aims to lay the foundations for a new generation of in-home multimodal question answering systems, which can answer day-to-day questions by jointly leveraging language and vision.
- The core of approaches are scene semantic graphs, a novel holistic representation of which combines pixels and words into a common symbolic space.
- The dataset includes 125 short 1-1.5 min real-life videos covering a diverse set of typical daily events, e.g., breakfast, cooking, playing, getting ready for work, etc.

Dec.2017 **YouTube Personality Detection**

- Aims to predict the Big Five Personality scores of an individual according to a video clip.
- Three features sets (i.e., all features, text features, and non-text features), and three different model (i.e., Lasso, SVM, and Random Forest). And result shows that using all features can achieve best performance (lowest MSE).
- The dataset includes the non-text features as well as the corresponding transcripts from 404 video clips.

Oct.2017 **NYT & Flickr Information Retrieval Through API**

- Aims to explore the correlation between articles in New York Times and photos on Flickr, concerning to the same keyword.
- Make a search on the New York Times using a target word and cache the keywords in the abstract in a .csv file. Using the same target word to make another requests to get the tags of the first 100 photos that resulted from the Photo Search to Flickr.

PUBLICATION

Apr.2016 **China Population Prediction with the Aid of Fast, Optimal and Accurate WASD Neuronet Compared with BP Neuronet**

- **Second Author**. Proceedings of 35th Chinese Control Conference (CCC), pp. 3673-3678, 2016. Published by IEEE Xplore, cited by EI.
- Methods: back-propagation (BP) algorithm; weights-and-structure-determination (WASD) algorithm; 3-layer feedforward power-activated neuronet (PAN) equipped with WASD algorithm or BP algorithm.
- Conclusion: China population will continue to increase at a low rate in the next decade, and the proposition that WASD algorithm is much more efficient and accurate than the BP algorithm is reproved.

PROFESSIONAL EXPERIENCE

Jul.2016 **China Merchants Securities**, Shenzhen, China
-Jan.2017 **Software Engineer Intern, IT Center**

- Join in the UI and database development of an offline investor information management system for an IPO project;
- Participate in developing the functional modules for the system; specifically, write JavaScript code on a visual developing platform to develop the web frontend part of the functional modules; build up database corresponding to the frontend part by using the MySQL Developer.
- Also provide assistance in testing the various modules of the management system, collecting feedbacks, and optimizing the system according to feedbacks.

LEADERSHIP ACTIVITIES

- **Captain** and **Power Forward/Center** of the Basketball Team of School of Electronics and Information Technology, SYSU.
- **Captain** of the “Dandelion” Volunteer Teaching Group; acted as English, Math, and Basketball teacher in Xu Wen County, Zhanjiang City after the typhoon.