Fanzhong Kong

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EDUCATION

University of Michigan, Ann Arbor, MI **May 2018**
Bachelor of Computer Science *GPA: 3.87/4.00*
Shanghai Jiao Tong University, Shanghai, China **July 2018**
Bachelor of Computer and Electrical engineering *GPA: 3.77/4.00*
Coursework:
Algorithm and Data Structure, Operating System, Machine Learning (+ NLP, RL), Number Theory, Web. System programming, Security, Database Management, Visual Game

RECENT EXPERIENCE

University of Michigan Database Research Group **May 2017 – Present**
Research Assistant, Code Completion System Group under Prof. Michael Cafarella

- Innovated to extract features from codes used to predict unknown parts in code with a 48% top-1 accuracy
- Used MRD to do word representation and trained features with logistic regression
- Used multi-threads to speed up data extracting process
- Built a REST API server on Linux remote server and the plug-in in *Atom* to domo the system
- Helped colleague collect labeled data through using Amazon Mechanical Turk

University of Michigan Biomechanics Physiology Lab **March 2017 – October 2017**
Software Developer, 3DSSPP (an MFC software used by Ford and other research groups) Group

- Worked with a team of 5 to develop functions based on *openGL* in an existing huge frame work
- Located and corrected the bugs existed, collaborating to improving the code or algorithm with low efficiency

PROJECTS / REPORTS

ICIR 2018 Reproducibility Challenge – TreeQN and ATreeC Differentiable Tree Planning for Deep Reinforcement Learning

- Reproduced the TreeQN, ATreeC (updated version of DQN, A2C) algorithms according to the details in paper
- Learned PyTorch and TensorFlow to build the NN and established baselines using OpenAI Baselines on gym and the self-developed environment
- Formed suggestions to help the author disambiguate the paper and add technical details

Feature Evaluation for Author Attribution – Python

- Evaluated six possible features (TF-IDF, N-gram-prob, Synonym, etc.) to judge the author attribution based on the AAAC training data and tested consistence in different models
- Learned nltk, scikit-learn libraries to help extract features and build synonyms and stop words
- Developed the project to allow training models on different combination of features on three (paragraph, passage, sentence) levels and output the passage-level accuracies

Wiki search engine – Python, HTML, JavaScript, mySQL

- Developed a search engine for part of Wikipedia using Flask and Jinjia libraries with page rank algorithm
- Used distributed computing (MapReduce) to speed up ranking process and save memory (to get tf-idf score)

Sentiments Classification on Twitter Data – Python

- Extracted feature with bag-of-words, applied SVM and One vs. One method to do the multiclass prediction
- Used different metrics (F1-score, AUROC, …) via cross validation to determine hyperparameters

Assessment on basic RL algorithms – Python

- Implemented MC, Q-learning, Dyna-Q, DNQ algorithms and evaluated their performances on Atari, gym
- Used grid-search and random search to set the hyperparameters

See more details (codes, report etc.) in my personal website: https://kongfanzhong.github.io/personal-website-kfz/