HANSI ZENG

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Homepage ◇ Github

EDUCATION

Nankai University, China **Bachelor**
Major in Mathematics, (Major) GPA 85/100 09/2014-06/2018

University of Wisconsin Madison **Master**
Major in Mathematics, GPA 3.7/4.0 09/2017-06/2019

University of Utah **Master**
Major in Computer Science, GPA 3.9/4.0 09/2019-06/20021

SELECTED COURSES

Computer Science: Advanced Algorithm, Computer Architecture, Artificial Intelligence, Computer Vision, Natural Language Processing, Motion Planning, Probabilistic Modeling
Mathematics: Applied Math, Computational Math, Stochastic Processes, Graph Theory, Multivariate Statistical Analysis, Abstract Algebra, Complex Analysis, Mathematical Analysis

RESEARCH EXPERIENCE

University of Utah, School of Computing, utahIR Lab 09/2019-Present
Research Assistant, advised by Prof. Qingyao Ai

- Build a toolbox for the **e-commerce product search** containing several state-of-art neural network based models.
- Write a short conference paper for review-based recommendation where the main technique we use is **transformer-like** model.
- Write a full conference paper based on the previous work. In this work, we use text **relevance matching model** originated from IR community for better user and item modeling. Also, other techniques like **zero-attention**, **multi-task learning** are added for boosting model performance.

PUBLICATIONS

- **Hansi Zeng**, Qingyao Ai. A Hierarchical Self-attentive Convolution Network for Review Modeling in Recommendation Systems. arXiv preprint arXiv:2011.13436. paper link
- **Hansi Zeng**, Zhichao Xu, Qingyao Ai. A Zero Attentative Relevance Matching Network for Review Modeling in Recommnder System. (submitted to ECIR 2020)

PROJECTS

Toolbox for E-commerce Product Search github repo 09/2019-12/2020
Independent Study, advised by Professor Qingyao Ai, School of Computing, University of Utah

- Build a toolbox for e-commerce product search followed by several software design patterns like **abstract factory pattern** to keep the code simplicity, extensibility and readability.
- The toolbox implements several state-of-art models by **TensorFlow** with thorough hyperparameter tuning and performance comparison.
- The main techniques used in the models are **doc2vec**, **attention network**, **knowledge graph embedding**.

Toolbox for Text Semantic Matching github repo 04/2020-Present
Extracurricular Activity

- Implement several state-of-art for review-based recommendation system like **NARRE**, **DeepCoNN** using **Pytorch** with hyperparameter tuning and performance comparison.
- Organize the the toolbox for easy training, hyperparameter tuning and model extension.
- Severed as strong baselines for our new proposed model in research.

Toolbox for Review-Based Recommendation System github repo 05/2020-Present
Extracurricular Activity

- Implement several state-of-art text semantic matching model like **RE2**, **CAFE**, **ESIM** using **Pytorch** with performance comparison.
- Organize the the toolbox for easy training, hyperparameter tuning and model extension.

Comparative Study of Reinforcement Learning-based and Traditional Motion Planning Algorithms presentation 09/2020-12/2020
Course project, advised by Alan Kuntz, School of Computing and the Robotics Center, University of Utah

- Design the simulation environment based on **racecarGymEnv** from the pybullet to compare the performance between traditional motion planning algorithms and reinforcement learning algorithms.
- Implement **RRT**(Rapidly-exploring random tree), **DQN**, **Reinforce**, **PPO**, and compare their training time, inference time, time to reach the goal in different enviroment settings.

Graph2vec for KEGG Pathway Topology Discovery 01/2018-06/2018
Course project, Lab of Anthony Gitter, Department of Biostatistics and Medical Informatics, University of Wisconsin Madison

- Employ graph2vec algorithm to process the KEGG pathways.
- Designed an entire process workflow for the classification task where we distinguish actual KEGG pathways from artificial ones.

TEACHING EXPERIENCES

- Teaching Assistant of ECE 3530 Engineering Probability and Statistics Fall 2020, UoU

SKILLS

Computer Languages **Python**/Java/R/C++/JavaScript/MATLAB/Linux/Unix/**TensorFlow**/**Pytorch**
GRE Verbal:153, Quantitative:168, Analytical Writing: 3.0

AWARDS

Second-class Scholarship, Nankai University 2015-2016
University Student Table Tennis Team Competition in Tianjin(ranked 3rd of 21 universities) 2016