Zhenduo Wang

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EDUCATION

University of Utah, Salt Lake City, UT Aug. 2018 - Present
Ph.D. candidate in Computer Science (Advised by Prof. Qingyao Ai and Prof. Vivek Srikumar)

University of Minnesota Duluth, Duluth, MN Sept. 2016 - May 2018
M.S. Mathematics (Co-advised by Prof. Yang Li and Prof. Ted Pedersen)

Dalian University of Technology, Dalian, China Sept. 2012 - Jun. 2016
B.E. student in Department of Software Engineering

RESEARCH INTERESTS

My research interest are Natural Language Processing and Information Retrieval, particularly conversational AI. I am also interested in Reinforcement Learning and Imitation Learning in general, and I will be excited to work on tasks outside NLP and IR with RL/IL.

PUBLICATIONS

Zhenduo Wang, Yuancheng Tu, Corby Rosset, Nick Craswell, Ming Wu, and Qingyao Ai. Zero-shot Clarifying Question Generation for Conversational Search. To appear in The Web Conference 2023.

Tao Yang, Zhichao Xu, **Zhenduo Wang**, Anh Tran, and Qingyao Ai. Marginal-Certainty-aware Fair Ranking Algorithm. To appear in Web Search and Data Mining (WSDM) Conference 2023.

Zhenduo Wang and Qingyao Ai. Simulating and Modeling the Risk of Conversational Search. In ACM Transactions on Information Systems (TOIS)

Zhenduo Wang and Qingyao Ai. Controlling the Risk of Conversational Search via Reinforcement Learning. In The Web Conference 2021.

Zhenduo Wang and Ted Pedersen. UMDSub at SemEval-2018 Task 2: Multilingual Emoji Prediction Multi-channel Convolutional Neural Network on Subword Embedding. In SemEval@NAACL-HLT 2018

Kevin Swanberg and Madiha Mirza and Ted Pedersen and **Zhenduo Wang**. ALANIS at SemEval-2018 Task 3: A Feature Engineering Approach to Irony Detection in English Tweets. In SemEval@NAACL-HLT 2018

WORK EXPERIENCE

Research Intern at Microsoft *May. 2022 - Aug. 2022*

- Zero-shot Clarifying question generation for conversational search.

Machine Learning Intern at Roku Inc. *May. 2021 - Aug. 2021*

- Conducted online and offline unbiased learning-to-rank for Roku's Search system.

Data Scientist Intern at American Family Insurance *May. 2019 - Aug. 2019*

- Developed, tested and refined a BERT based Multi-Task Learning model for home issue classification.
- Organized and launched data annotation tasks in an efficient and productive manner with third-party labeling platform.
- Conducted LDA topic modeling to identify topic distribution natures in our dataset.

RESEARCH EXPERIENCE

Evaluate Natural Language Generation models by ranking metrics University of Utah

Jan. 2020 - June. 2020

- Design a ranking based metric to evaluate NLG models based their score for different variations of gold reference.
- More fair than existing word-overlap-based evaluation metrics with desired NLG metric properties.

Solving Cryptic Crossword Puzzles University of Utah

Mar. 2019 - May. 2019

- Train system to solve Cryptic crossword puzzles using seq2seq net.

Solving Math Word Problem Automatically University of Utah

Sept. 2018 - Dec. 2018

- Solve Math Word Problem by determining the question(operation) type and the operands from the problem in text.
- Classify operation type using a CNN network.
- Classify operands using feature engineering and SVM.

DEVELOPING EXPERIENCE

Magic Circle: A Card Video Game *Jan. 2014 - Apr. 2015*

- Designed and developed a card game with Unity3D engine.
- Won the third prize in the Microsoft Imagine Cup Game Competition 2015.
  `https://v.youku.com/v_show/id_XOTIyNzAxNjAw.html`
  `https://github.com/zhenduow/TMC`

HONOR AND AWARDS

Outstanding Graduate Student Award at University of Minnesota Duluth 2018
Outstanding Graduate Teaching Assistant at University of Minnesota Duluth 2018
Meritorious Winner (1^{st} prize) in Mathematical Contest In Modeling 2016
3^{rd} prize in Microsoft Imagine Cup Games Competition 2015
Outstanding acamedic work Scholarship at Dalian University of Technology 2014
Provincial 1^{st} prize, National 3^{rd} prize of Chinese Mathematical Competition 2013