Sicheng Wang

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EDUCATION

Department of Automation, Tsinghua University, China   Aug 2017-Jul 2021

B.E. in Automation,   **GPA: Major: 3.86/4.00**   **Overall: 3.82/4.00**   **Ranked 24/183**

Core Courses: Probability and Statistics(98) / Computer Principles and Applications (98) / Data Structures (92) / Signals and System Analysis (92) / Digital Electronics (92) / Computer Languages and Programming / C++Programme Design and Training / Digital Image Processing(92) / Numerical Analysis and Algorithms(98) / Computer Networks and Applications / Foundation of Artificial Intelligence / Operations Research(92) / Pattern Recognition and Machine Learning / Smart Sensing and Measuring(92) / Process Control(98)

RESEARCH EXPERIENCES

Department of Electrical and Computer Engineering, University of California San Diego   **Feb 2020 – Present**
Advisor : Pengtao Xie, Assistant Professor
Project: Identify Risk Factors of COVID-19 from Medical Literature
- Further pretrained the BioBERT model on CORD-19 Dataset and finetuned a sentences classifier which can choose the sentences that contains the risk factors of the COVID-19 from unstructured medical literature.
- Designed different negative sentence selection schemes and prove the importance of them with experiments.
- Proposed a method of using QA to avoid the overfitting problem of NER model while extracting the risk factor from positive sentences.

Project: CERT: Contrastive Self-supervised Learning for Language Understanding
- Proposed a method of using back translation for data augmentation.
- Designed and conducted a series of experiments independently using the BERT model and the structure of SimCLR for Self-supervised Learning to achieve better performance on SST-2 task.
- Conducted the CERT experiments on SQuAD v1.1, SST-2 and MRPC.

Institute of System Integration, Department of Automation Tsinghua University   **Dec 2018 – Jul 2019**
Advisor : Linxuan Zhang, associate director of the Institute of System Integration
Project: Semi-supervised Sentiment Analysis of Danmu (video comments)
- Segmented the Chinese video comments into words and obtained emotion labels based on a Chinese common words emotion database.
- Calculated the TF-IDF of each word and selected the key words of Danmu which tend to be new network terms.
- Applied the LSTM model and implemented self-training algorithm as a semi-supervised approach to predict the emotion of the extracted keywords.

Project: Prediction of Remaining Life of Trains
- Experimented different ways to sample the data and decided which way is effective by using PCA to reduce the dimensions and comparing the clustering effect of K-means algorithm.
- Introduced the element-wise attention gate to the LSTM model to improve the regression performance.

PUBICATION

He Xuehai, Shu Chen, Zeqian Ju, Xiangyu Dong, Hongchao Fang, **Sicheng Wang**, Yue Yang et al. "MedDialog: Two Large-scale Medical Dialogue Datasets." EMNLP, 2020

Hongchao Fang, **Sicheng Wang**, Meng Zhou, Jiayuan Ding, Pengtao Xie, "CERT: Contrastive Self-supervised Learning for Language Understanding" submitted to TACL, 2020

AWARDS

Philobiblion Scholarship (2 among 183)
Best Rookie Award in the 37th Challenge Cup of Tsinghua University (16 among 784)
The First Prize of Non Physical Professional Group A in the 35th National Physics Competition of College Students

LEADERSHIP ACTIVITIES

The Publicity Department of the Student Union, Automation Department, Tsinghua University | member   Aug 2018 - Jul 2019
- Designed the key chain for the freshmen
- Managed the interview, data arrangement and the countdown poster making of the Student's Day
- Edited and produced the promotion video for the sports meeting held by three departments

"Robots in my heart"- service robot survey team | Team Leader   Aug 2018
- Created and organized the team to investigate the service robot technology and business model of CloudMinds Company in Beijing
- Investigated people's understanding and acceptance of service robot through street interviews and questionnaires

SKILLS
- Solid expertise in Python, C++, C#, MATLAB
- Experienced in Verilog HDL, Assenmbly Language
- Languages: Mandarin Chinese, English
  Proficient in English listening, reading, speaking and writing
  GRE: V:155, Q:169, AW:3.5   TOFEL: 98 (R:29,L:27,S:21,W:21)