Xiao Chu

Master of Engineering, ECE, Queen's University

Education

Queen's University, Kingston, Ontario, Canada
Master of Engineering, Electronic and Computer Engineering, *Sep' 19 - Dec' 20 (Expected)*
GPA: 4.0/4.3

Wuhan University of Technology, Wuhan, Hubei, China
Bachelor of Engineering, Computer Science and Technology, *Sep' 15 - Jun' 19*
GPA: 90.17/100 (3.78/4.0) Ranked **10**th over 227 students (top **5**%)

Research Interests

Machine Learning, Nature Language Processing
Sentiment Analysis, Automatic Text Generation, Text Extraction

Awards & Achievements

Outstanding Graduate *Apr' 2019*, Wuhan University of Technology
The Third-Class Scholarship *Sep' 2018*, Wuhan University of Technology
Academic Excellence Award *Apr' 2018*, Wuhan University of Technology
The Second-Class Scholarship *Sep' 2017*, Wuhan University of Technology
The Third-Class Scholarship *Sep' 2016*, Wuhan University of Technology

Research Projects

SemEval2020 Task5 Modelling Casual Reasoning in Language: Detecting Counterfactuals
Supervisor : Dr.Xiaodan Zhu *Sep '19 - Jan '20*

- Constructed the dataset with more than 10,000 text instances. Collected the original data from Internet and removed all non-linguistic information from original data.
- Revised the annotations made by annotators, split the whole dataset into training dataset and test dataset respectively.
- Built a binary classification model as baseline model in subtask 1 using SVM.
- Built a sequence labelling model as baseline model in subtask 2 using CRF.
- Devised a word-level Precision/Recall/F1-score metric and a sentence-level Exact Match metric. Compared with existed metric functions provided by Pytorch, these two metrics could better measure models' performance in subtask 2.
- For more details about this project, please refer to SemEval 2020 Task5.

Verbal Irony Detection
Supervisor : Dr.Xiaodan Zhu *Apr '20 -*

- Constructed the dataset which includes more than 1,500 text-audio bi-modality instances.
- Built the audio-modality model based on Transformer, extracted the audio feature using OpenSmile and IS09 feature dataset. This model was a baseline model for audio-modality in this dataset.
- Built the text-modality model based on BERT, This model was a baseline model for text-modality in this dataset.
- Built two multi-modality fusion model as baseline models for multi-modality fusion in this dataset.
- Devised a bi-linear fusion model based on cartesian product, compared with original fusion model, this model improved 6% performance in this dataset.
- We plan release our dataset, code and submit our paper to Language Resource and Evaluation this December.

Computer Skills

Languages
Python (Proficient), C++/C, Matlab, LaTeX

Deep Learning Framework
Pytorch (Proficient). Read the Python source code of Pytorch 1.4.1, skilled at building customized neural network and large-scale pre-trained neural network.
Tensorflow (Experienced). I have the experience of re-writing the Tensorflow-based code to Pytorch.

Machine Learning and Deep Learning Background

Mathematics
- Passed undergraduate course "Probability and Mathematics Statistic" and graduate course "Probability, Random Variable, Stochastic Process" (ELEC 861) in full mark.
- Read the book "Introduction to Linear Algebra" (Gilbert Strang) to enhance my linear algebra skill.

ML&DL
- Passed graduate course "Machine Learning and Deep Learning" (ELEC 845) at 4.0 GPA.
- Read the book "Deep Learning" (Ian Goodfellow et al.) and "Pattern Recognize and Machine Learning" (Christopher Bishop) to enhance my knowledge and understanding in this field.

Extra Interests

Caligraphy: Chinese Caligraphy uses writing brush made by weasel's or sheep's hair to write Chinese characters in different forms such as Song, Cao, Xing. It is a traditional art form in China. I practiced caligraphy for 6 years since I was ten year's old.
Computer Hardware: Very interested in computer hardware, assembled a personal computer at very young age independently, helped many classmates choose hardwares (graphic card, cpu, memory, motherboard etc.) and assemble their own computers.