CV

Personal Information

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Education Background

USC **08/2021 - Now**

Major: **Electrical and Computer Engineering** GPA: **4.0/4.0**

Finished:

Core courses: Linear Algebra, Probability for Engineering, Computation introduction to Deep Learning, Geometry differential manifold, Computational principles, Machine Learning I:Supervised machine learning method

Ongoing:

Mathematics of High-Dimensional Data,Applied Natural Language Processing,Applied and Cloud Computing for Electrical Engineers, Machine Learning II: Mathematical Foundations and Methods

Beijing Jiaotong University **09/2016-06/2020**

Major: **Communication Engineering** GPA: **3.66/4.00 (87.9/100)** Major GPA**: 3.75**

College: School of Electronic and Information Engineering

Core courses: Deep learning, Machine learning, Foundation of Complex Network, Optimization, Geometry and Algebra, Probability Theory and Mathematical Statistics, Computer Network, Principles of Communication Systems, Analog Electronics Technology, Digital Signal Processing

Research Projects

Research on Bloom datasets (currently work with researchers from Allen Institute for AI) **6/2022-now**

- Generate more dedicated and confusing long-tailed datasets to evaluate robustness and generation of SOTA models

Research on robustLR datasets **12/2021-6/2022**

- Generate synthetic datasets with different logical operations and make sure the datasets are balanced i.e. there is nearly no count-based spurious feature in datasets
- Trained on different datasets containing different logical operations with RoBERTa, T5, T5-3b,T5-11b models
- Evaluating checkpoint on contrast, equivalent, negated datasets
- Significant drops during evaluation compared to I.I.D performance and find that more complex rules is more hard for model to deal with.
- Popular fine-tuning LMs such as RoBERTa and T5 on deductive reasoning datasets is not sufficient to learn the semantics of the logical operators conjunction, disjunction, and negation.

Research on Recommendation System for Math Exercises **03/2019-10/2019**

- Participated in the supervisor's project on the differentiation of similar math problems by using Natural Language Processing model
- Changed the Siamese framework into a Triplet framework that could simultaneously process three sets of math exercises and focus on increasing distance between dissimilar exercises while reducing distances between similar exercises
- Employed the Bidirectional Encoder Representation from Transformers model, Long Short-Term Memory model, Siamese, Triplet framework, and finally introduced Text Convolutional Neural Network instead of average pooing as a pooling method to enhance accuracy rate

- Visualize the attention part of Encoder and analyze the connection between words
- Sent the combination of the questions and the answers of those math exercises to the model training and constructed a model, in which case the accuracy rate of 200 exercises was improved by 0.03
- Finished the essay about Recommendation System for Math Exercises

Career Related Experiences

RA, Ink Lab **12/2021 - Now**

RA, Beijing Jiaotong University ADaM Lab **09/2020-06/2021**

- Won the Third Prize in sentiment classification competition of Southern Grid Company
- Tried to use Patch Model based on different data distribution (Causal or Non-Causal, Explainable or Non-Explainable)to rectify the result
- Tried to use adversarial training to increase the robustness.
- Used PPLM and Checklist for NLP to create counter-factual examples
- By exploiting Contrastive Learning, enlarging the distance between the examples belonging to the same label and shortening the distance between the normal examples and counter-factual examples.
- Used O.O.D samples to evaluate the model, which could get a fairer evaluation。

Intern, Lenovo Group **09/2019-10/2019**

- Used Html, Django, JavaScript to connect to the database login system, and called Baidu face recognition detection API to achieve the use of face login recognition system
- Realized login when the alignment of login face and database registered face reached more than 70%
- Learned to use a crawler to simulate landing on a Lenovo official website and crawled for information
- Learned to use JavaScript to crack the encryption of captcha id to login
- Studied the utf-8 encoding principle and the transition between local computers and servers, I decoded the encoded byte to display the web page normally

Intern, Beijing Zhongkeshenwei Technology Co., Ltd. **07/2019-09/2019**

- Mainly installed and configured deep learning related virtual environment, as well as cuda, cudnn and other GPU basic configuration and used git and other related commands to upload files required by the server
- Participated in the Detecting of Eye Diseases through Fundus Photos Competition on Kaggle platform, and completed the deep learning model from zero to one, mainly including ResNet-50, Visual Geometry Group(VGG) models
- Increased the model's effectiveness by increasing the color contrast of the blood vessels, and cutting the invalid black shape in the picture
- Assisted the Doctoral Candidate to complete the thesis, including running the MATLAB, C++, python's deblurring program ,like wiener filtering, and finally selected the Lucy-Richardson Algorithm where the type of the filter is average and the coefficient of it is 1/25 to preprocess the blurred image

Awards & Scholarships

The Third prize in text classification by Southern Grid Company 12/2020

First-class University Scholarship, Beijing Jiaotong University 11/2019

Honorable Mention in Interdisciplinary Contest in Modeling Certificate of Achievement 04/2019

Second-class University Scholarship, Beijing Jiaotong University 11/2017

Merit Student, Beijing Jiaotong University 12/2017