XIAOCHANG LI

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EDUCATION BACKGROUND

East China Normal University, Shanghai, China *09/2018-Present*

- Graduate student in Data Science and Engineering GPA: 87.6/100, ranking(2/47)
- Member of ECNU-BAIDU Joint Laboratory on Computational Education
- Core courses: Machine Learning: 95, Advanced Database System: 97, Data Mining: 89, Algorithm of Data Science and Engineering: 85, Mathematical basis of Data Science and Engineering: 89, etc.

Zhejiang University of Technology, Zhejiang, China *09/2014-07/2018*

- B.S. in Computer Science GPA: 86.6/100, ranking(7/85), major GPA: 87.09/100
- Core courses: Design and Analysis of Algorithm: 92, Computer Architecture: 93, Principle and Application of Database System: 96, Data Structure: 89, Software Engineering: 95, etc.

Stanford University *03/2020-09/2020*

- Research assistant of Prof. Zhengyuan Zhou from Stanford University

Zhejiang University of Technology, Zhejiang, China *09/2015-07/2017*

- Minor in Law GPA: 85.6/100

RESEARCH EXPERIENCE

Identifying and correcting Chinese spelling errors *07/2020-Present, Shanghai*
Leading researcher, with Pigai.org (A leading company in grammatical correction), advisor: Prof. Xuesong Lu

- Developed first Chinese Spelling error correction system for Pigai.org through conducting mask language model of BERT on errouneous and correct characters.
- Conducted data argumentation by replacing correct characters in sentences with confused ones, and filtered good senteces by language model.
- Woking on integral gradients, and constrastive learning to enchance interpretability of identication of erroneous characters.
- Planing to solve more types of grammatical error correction with reinforcement learning in the future. (e.g. disorder, missing words)

Boosting policy gradient's convergence with federated learning *03/2020-09/2020, Stanford University*
Research assistant, remote modality, advisor: Prof. Zhengyuan Zhou

- Proposed and implemented federated policy gradient and empirically proved the convergence of the model on Linear-Quadratic Regulator (LQR) problem.
- Evaluated federated policy gradient's convergence on more difficult cartpole problems under different parameter setting, and achieved promising results compared with the vanilla one.
- Federated policy gradient could save even 70% time expense compared with the vanilla one under some circumstances on cartpole problem.

Discovering traveling companions with autoencoders *06/2019-05/2020, Shanghai*
Leading researcher, advisor: Prof. Xuesong Lu

- Injected positional encoding into point representation to signal temporal information of trajectory points, which has been proved effective in the ablation study.
- Leveraged sort-tile-recursive algorithms to roughly discover neigbor trajectories, and designed similarity loss to force trajectories' representations to learn from neighbor ones.

- Applied attention mechanism to assign different weights to trajectory points to generate better representation of trajectories to alleviate the sparsity and noisy of trajectories.
- Initiated a Mean-Attn Autoencoder and discovered more traveling companions with less time and achieved state-of-the-art performance compared with traditional and deep learning algorithms.

Generating Chinese articles for primary students automatically *01/2019-10/2019, Shanghai*
Leading researcher, with Baidu, advisor: Prof. Xuesong Lu

- Crawed twenty thousands Chinese articles of primary students according to their topics.
- Modified and trained MeanSum unsupervisedly to generate articles within the same topic, and volunteered to train GPT-2 to generate fluent articles without topic regulations.
- Baidu apoted these two solutions, and saved lots of money on generating articles for primary students.

Generative relation extraction with a multi-word span copy mechanism *08/2020-Present, Shanghai*
Assistant researcher, with Ph.D. candidate Jiarun Cao (University of Manchester)

- Solved low accuaracy of word-by-word copy mechanism in seq2seq framework by BIO tagging strategy, and co-designed a multi-span copy mechanism.
- Evaluated and improved pretrained Unilm to extract relations with the help of multi-word span copy mechanism.
- Achieved better accuracy, precision, and recall on NYT 24 & 29 datasets compared to baseline methods.

PUBLICATIONS

Xiaochang Li, Bei Chen, Xuesong Lu, Discovering Traveling Companions using Autoencoders, Journal of East China Normal University (Natural Science), 2020

SCHOLARSHIP & HONORS

- 2^{nd} Prize of China Post-Graduate Mathematical Contest in Modeling at national level (13%) *09/2018*
- Honorary graduate of Zhejiang University of Technology (5%) *07/2018*
- 2^{nd} Prize of Service Outsourcing Contest of ZJUT (15%) *09/2016*
- First-Class Scholarship for Excellent Student of ZJUT (2%) *09/2017*
- Second-Class Scholarship for Excellent Student of ZJUT (8%) *09/2016 & 2015*
- Zhejiang Provincial Government Scholarship (5%) *09/2016 & 2015*

LEADERSHIP & VOLUNTEER EXPERIENCE

- Captain of basketball team of school of Data Science and Engineering at ECNU *09/2019-12/2019*
  - Led team to win the first third prize of ECNU graduate basketball competitions.
- Senior staff of alumni association of school of Computer Science and Technology at ZJUT *09/2014-09/2015*
- Senior staff of sports department of Computer Science and Technology at ZJUT *09/2014-09/2016*
  - Organized ZJUT yearly cricket competitions for the whole school for two years.

SKILLS

- **Professional skills:**
  - Proficient in Pytorch, Python, and C++.
  - Familiar with Tensorflow, Keras, and JAVA.
  - Skilled in LATEX, proficient in using github.
- **Language level:**
  - GRE: Verbal Reasoning: 160, Quantitative Reasoning: 168, Analytical Writing: 3.5.
  - TOEFL: Reading: 26, Listening: 29, Speaking: 23, Writing: 25, Overall: 103.