Wentao Zhang

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Education

Shanghai Jiao Tong University   **September 2017 – June 2021**
Bachelor of Science
○ Major in Computer Science and Engineering
○ Major GPA: **87.9/100**, Third year: **92.9/100**
○ Selected to the <u>**ACM Honor Class**</u> (an elite CS program at SJTU for the top 5% of students)

Research Experience

APEX Data and Knowledge Management Lab [LINK]   **July 2019 – June 2020**
Research Intern - Shanghai Jiao Tong University
- **Urban Traffic Prediction**
  ○ Supervised by <u>Prof. Weinan Zhang</u>, cooperate with <u>Dr. Zheyi Pan</u>.
  ○ Learn the basic knowledge of graph neural network and spatial temporal data mining.
  ○ Compare on series of previous models on traffic predicting.
  ○ Put forward novel architecture Meta-GAT$^+$ and Meta-GRU$^+$ so that the model can be aware of diverse geo-information and dynamic traffic flow and achieve **state-of-the-art** performance.
  ○ Publish a paper on *Transactions on Knowledge and Data Engineering*.
- **Dialogue Generation with Commonsense Enriched Personalized Knowledge**
  ○ Supervised by <u>Prof. Weinan Zhang</u>, and <u>Prof. Diyi Yang</u>.
  ○ Have a survey on a series of dialogue generation model
  ○ Put forward a new task: multi-turn dialogue with personalized and commonse knowledge.
  ○ Crawl **1,183,007** multi-turn dialogues from Reddit, and then select **80,089** dialogues with rich personalized preference.
  ○ Extract knowledge from the dialogues using NER tools and build knowledge base for each user and use *vaderSentiment* to analyze users' attitude towards knowledge.
  ○ Write crawler to link user knowledge to commonsense knowledge on *WikiData*.
  ○ Evaluate this dataset on cutting-edge dialogue models (e.g. DialoGPT).

Social And Language Technologies (SALT) Lab [LINK]   **July 2020 – Present**
Remote Research Intern - Georgia Institute of Technology
- **Template Guided Knowledge Graph to Text Generation**
  ○ Supervised by <u>Prof. Diyi Yang</u>
  ○ Generate syntax template from knowledge graph using state-of-the-art models.
  ○ Incorporate syntax template with knowledge graph while training.
  ○ Use diverse penalty to increase the diversity of template.
  ○ Use MMI-reranking to select the best template for generation.
  ○ Still in progress
- **Tabular Data Augmentation**
  ○ Supervised by <u>Prof. Diyi Yang</u>, cooperate with <u>Dr. Zichao Yang</u>.
  ○ Compare baseline models using Gradient Tree Boosting, Factorization Machine and Deep Neural Networks.
  ○ Still in progress

Publications

Spatio-Temporal Meta Learning for Urban Traffic Prediction [PDF]   **May 2020**
Transactions on Knowledge and Data Engineering
*Zheyi Pan, **Wentao Zhang**, Yuxuan Liang, Weinan Zhang, Yong Yu, Junbo Zhang, Yu Zheng*

Honors & Awards

Zhiyuan Honorary Scholarship   **October 2017, 2018, 2019, 2020**
○ Scholarship for top 5% talented students that selected to Zhiyuan Honor Program

Excellent Academic Scholarship - C class   **September 2019**
○ Scholarship for top 20% students in the university

Excellent Academic Scholarship - B class   **September 2018**
○ Scholarship for top 10% students in the university

Honorable Mention in Interdisciplinary Contest in Modeling   **April 2019**
○ Top 15% among more than 12,000 teams worldwide.

Selected Projects

Commonsense Machine Reading Comprehension [report][code]   **December 2019**
- o Evaluate ReCoRD reading comprehension with commonsense reasoning dataset on ALBERT model.
- o Use data from ConceptNet to enrich the entities in text with embedding of knowledge graph.
- o Use the relation from ConceptNet to pretrain the ALBERT model.
- o Receive **70/70** grade as course project of *Deep Learning and Application* by Prof. Junchi Yan

Text CNN for Text Classification [leaderboard]   **May 2019**
- o Leverage pretrained word vector and Text CNN in text classification.
- o **Rank 1** in in-class competition of *Machine Learning* course given by Prof. Weinan Zhang.

Pint OS [code]   **June 2019**
- o A simple operating system, course project of Stanford CS140
- o Includes kernel threads, loading and running user programs, and a file system

Mx Compiler [code]   **June 2019**
- o A compiler that compiles Mx* (a java-like language) to NASM assembly implemented in Java.
- o Implemented liveness analysis, graph coloring register allocation, function inline, dead code elimination and other basic optimization techniques.
- o Receive **98/100** in Complier Design course.

RISC-V Pipeline CPU [code]   **December 2018**
- o CPU with 5-stage pipeline implemented in Verilog.
- o Pass simple tests on FPGA.

P2P File Transfer System [code]   **August 2018**
- o A Peer to Peer file transfer system based on **Chord** distributed hash table protocol implemented in Golang.
- o Enables decenteralized file transfer within local area network.

Teaching Experience

Data Structure   **February 2019 - May 2019**
Teaching Assistant
- o Make test problems and grade students' projects.
- o Help students to understand concepts in data structure.

Principle and Practice of Computer Algorithms   **July 2019 – August 2019**
Teaching Assistant
- o Lead and help a group of students to build a distributed hash table system and develop applications on that.
- o Make test problems and grade students' projects.

Machine Learning   **February 2020 – May 2020**
Teaching Assistant
- o Make test problems, design the course project and grade students' projects.

Skills

Programing Language
- o Proficient: C, C++, Python, JAVA
- o Good: Verilog, Golang
- o Basic: Javascript

Technical Skills
- o Proficient: Pytorch, Mxnet
- o Good: Matlab, Tensorflow
- o Basic: Flask