Zihan Xu

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EDUCATION

Department of Computer Science and Engineering, Shanghai Jiao Tong University (SJTU)　　　Sep 2017 - June 2021

B.E. in Computer Science, Overall GPA: 3.62/4.0, Computer Science Major GPA: 3.88/4.0

Core Courses: Computer Network (95) / Data Structure (91) / Computer Organization (95) / Artificial Intelligence (93) /

Software Engineering (90) / Computer System Engineering (90) / Information Theory (96) / Linear and Convex Optimization (96)

School of Computing, National University of Singapore (NUS)　　　Aug 2021 – June 2022 (expected)

RESEARCH EXPERIENCES

Interactive Text-to-SQL Dialogue System,　SJTU, Shanghai, China & AISpeech Co., Suchow, China　　　Oct 2019 - Jan 2020

Advisor: Kai Yu, Professor at Department of Computer Science and Engineering, SJTU

➢ Reproduced IRNet, a deep learning model that translates natural language questions into executable SQL queries, conducted intensive experiments on the Spider dataset and achieved similar result with the raw implementation

➢ Optimized the model by simplifying its architecture and replacing FP32 with FP16, achieving a 50% speed boost overall

➢ Deployed the model on a real-world AI dialogue system and received positive feedback from users

WORK EXPERIENCES

Software Developer Intern,　Highfort Investment（赫富投资）, Shanghai, China　　　Dec 2020 - July 2020

➢ Designed and implemented an LDAP-based authentication system, then built API-level protection for internal systems

➢ Developed a market data monitor in Rust, which receives real-time market data and triggers alerts once observing delay

➢ Built a market data broadcasting system with ZeroMQ Radio-Dish pattern, using multi-threading to achieve low latency

PROJECTS

Children-Parents Dialogue Action Annotation Platform, Aix-Marseille University, France　　　July 2020 - Oct 2020

Advisor: Abdellah Fourtassi, Professor at Department of Computer Sciences, Aix-Marseille University

➢ Designed a web-based annotation platform that allows users to annotate on a Children-Parents corpus called CHLIDES

➢ Built a front-end UI as the annotation interface using jQuery and improved the UI design based on user feedback

➢ Developed a tool to visualize annotation differences between annotators and to calculate Inter-Rater Reliability scores

Landmark Recognition Challenge, SJTU, Shanghai, China　　　Dec 2018 - Jan 2019

Advisor: Professor Ya Zhang, Advanced Network Laboratory (ANL), SJTU

➢ Built a distributed web crawler to efficiently collect pictures of landmarks, created a small dataset consisting of 200 landmarks with 100 images for each landmark, then doubled the size of the training set using augmentation skills like flipping and scaling

➢ Implemented an image recognition unit using different algorithms including K-means, KNN, SVM, and CNN, achieving the highest accuracy rate of 81% with CNN

➢ Proposed to encode images with pre-trained models like VGG16 and ResNet50, achieving 91% accuracy with ResNet50

AWARDS

➢ Zhiyuan Honorary Scholarship (Top 5%), Shanghai Jiao Tong University　　　2017 & 2018 & 2019 & 2021

➢ Class C Scholarship (Top 20 %), Shanghai Jiao Tong University　　　2017 & 2018 & 2019 & 2021

➢ First Prize of 33rd National Physics Olympiad, Jiangsu Province, China　　　2016

SKILLS

➢ **Languages**　C++, Rust, Python, Go, OCaml, Java, SQL, CUDA, JavaScript, Typescript, Markdown, Bash, Verilog, Swift

➢ **Techniques**　Linux, Git, Docker, Protobuf, Bazel, Firebase, PyTorch, Clickhouse, PostgreSQL, AWS, Mobx, React.js, Flask

PUBLICATIONS

➢ Memory Attention Neural Network for Multi-domain Dialogue State Tracking. *Proc. NLPCC-2020 (oral presentation)*

➢ ShadowGNN: Graph Projection Neural Network for Text-to-SQL Parser. *Proc. NAACL-2021*

PATENTS

➢ 对话状态跟踪方法、系统及人机对话方法. CN Patent Application 111767383A, filed July, 2020. Patent Pending