Qinxin **Wang**

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Education

Shanghai Jiao Tong University (SJTU)
Shanghai, China

Bachelor in Information Security — *Sep. 2017 - June. 2021(expected)*

- **GPA**: **Overall** - 89.3/100 **CS&Math related** - 91.5/100 **Rank**: 6/108
- **Selected Courses**: Linear Algebra, Probability and Statistics, Discrete Math, C++ programming, Computer Organization and Architecture, Data Structure and Algorithms, Intro to Database, Principle of Compilers, Computer Networks, Intro to Artificial Intelligence, Computer Vision

University of Texas at Austin
Austin, Texas

Reciprocal exchange student in Computer science — *Jan. 2020 - May. 2020*

- **GPA**: 4.0/4.0
- **Courses**: Principles of computer system, Natural language processing, Computer security

University of Washington
Seattle, Washington

Global Electrical Engneering Program — *Jul. 2018 - Aug. 2018*

- **Courses**: Introduction to C and Microprocessors & lab, Circuit Theory & lab

Research Experience

Weakly-supervised phrase localization
Jan. 2020 - Jun. 2020

Research Assistant, Advised by Prof. Micheal Mahoney, Department of Statistics — *UC Berkeley*

- Given images and their paired captions, we developed effective unsupervised and weakly-supervised methods to localize phrases in captions to objects in the image.
- Adopted fine-grained image and text representations, including visually-aware phrase features and multi-level visual features to make better alignment between two modalities.
- Proposed a contrastive objective and a multimodal similarity function to leverage information in caption-image pairs and boosted the performance in weakly-supervised scenarios. Experiments on Flickr30k show a significant 22.72% accuracy improvement over existing methods.

Reading Comprehension on Academic Literature
Mar. 2019 - Sep. 2019

Research Assistant, Advised by Prof. Weinan Zhang & Prof. Xinbin Wang — *SJTU*

- Involved in developing a question answering system on our collected dataset PaperQA, with over 15K question-answer pairs, in order to help scholars quickly understand paper abstracts.
- Constructed a heterogeneous graph with Acemap academic data, consisting of authors, conferences, publications and so on. Implemented and compared various heterogeneous graph embedding algorithms, including TransE, TransD, and Metapath2Vec.
- Combined semantic information with graph knowledge by adding a graph encoder layer in pre-trained BERT. Finetuned the model on paperQA dataset to improve question-answering tasks for academic papers.

Work Experience

Alibaba, Search and Recommendation Group
Jun. 2020 - Sep. 2020

Software Engineering Intern, AI-OS Engine — *Hangzhou, China*

- Involved in developing SARO(Search, Advertisement, Recommendation Offline) – an offline big data Extract-Transform-Load (ETL) platform.
- Designed a configuration-as-code module to manage configuration and feature toggle for the core processing engine, which supports automatic release, update, and delivery of configuration files.
- Refactored code with user-friendly interface and well-organized configuration files. Provides sanity check and validation with Java annotation.

Selected Projects

Defense system against adversarial attack

May. 2020 - Jul. 2020

Supervised by Tanfeng Sun, School of Cyber Science and Engineering

- Designed a defense system for possible adversarial attack targeted at object detection algorithms, with generates noisy adversarial patches against YOLOv2 in human detection
- Implemented a local gradient smoothing module with image enhancement algorithm, which enables YOLO to defend against adversarial patches

Operating System from scratch

Jan. 2020 - May. 2020

Course project of CS439 Principles of computer system at UT Austin [link]

- Build basic components of an operating system based on skeleton code provided by CS439. My work includes implementing heap memory allocation, preemptive multi-threading, synchronization primitives, file system, virtual memory, system calls, etc.

Cap detection and pose estimation

Dec. 2019

Course project of SE342 Computer Vision [link]

- Designed a detect-match algorithm based on template matching to detect caps with different colors and shapes on the background and to estimate their pose
- Combined SIFT and HOG algorithm to extract local and global features respectively and matched every cap in the test set to the standard set

Publications

MAF: Multimodal Alignment Framework for Weakly-Supervised Phrase Grounding

- Authors: **Qinxin Wang**, Hao Tan, Sheng Shen, Michael W. Mahoney, Zhewei Yao
- Accepted for publication on *the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP 2020)*

Honors & Awards

Scholarship

2019	Huawei Scholarship (5 among 800)	*SJTU*
2019	Academic Excellence Scholarship (top 10% in SEIEE)	*SJTU*
2018	Outstanding Student in Shanghai Jiao Tong University (40 among 4000)	*SJTU*
2018	Scholarship of Matsushita Electric Education Fund (6 among 800)	*SJTU*
2017	Tung OOCL Scholarship (1 among 51)	*SJTU*

Academic

2019 **Meritorious Winner (Top 5%),** Mathematical Contest in Modeling (MCM)

2018 **Second Prize ,** China Undergraduate Mathematical Contest in Modeling

Skills

Programming Python, C++, C, JAVA, SQL, Verilog, LaTeX

Framework PyTorch, Numpy, NLTK, ElasticSearch, Springboot, Django

English TOFEL:110 (Listening: 30, Reading: 30, Writing: 27, Speaking: 23)