GONGYI SHI

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EDUCATION

Master of Computer Science, University of California San Diego 2022 - (expected) 2024

- 3.97/4.0 GPA

Honors Bachelor of Computer Science and Statistics, University of Toronto 2017 - 2022

- 4.0/4.0 Major GPA. Graduate with High Distinction

EXPERIENCE

Student Researcher on Causal Inference Apr 2023 - Current
Halıcıoğlu Data Science Institute - University of California San Diego *La Jolla, CA*

- Conducting causal inference research under the supervision of Professor Zhiting Hu and Professor Biwei Huang.
- Continuously studying the latest research in large language models and causal inference.

Software Developer Sept 2020 - Sept 2021
Echoworx *Toronto, ON*

- Developed the customized automation framework.
- Automated 50+ manual testing procedures using the framework, boosting test efficiency by 10+ times.

iOS Software Developer Nov 2020 - Mar 2021
Conceptualiz *Toronto, ON*

- Worked on infrastructure updates on deprecated 3D surgery planning application.
- Oversaw application release and testing on iOS devices.

RESEARCH ACTICITIES

Thinking Outside of the Lab: VR Size & Depth Perception in the Wild. We describe a fully remote perceptual study with a gamified protocol to encourage participant engagement. Our study aims to understand medium-field size and egocentric distance perception in real-world usage of consumer VR devices. (Check out the paper)

PROJECTS

Network Router. I implemented a simple router that processes different ARP and IP (TCP, UDP, and ICMP) packets in multi-router topologies. It supports ARP cache, the Longest Prefix Matching algorithm, and useful commands such as ping and traceroute. In addition, I also implemented the TCP sliding window on end hosts, with congestion control.

Multi-Vehicle Detecting, Tracking, and Motion Predicting. I built an object-detecting, tracking, and motion-predicting model with LiDAR input with help from Prof. Raquel Urtasun, the founder and CEO of Waabi. I also improved the models with sophisticated loss functions, target hard mining, and Gaussian target representation, and evaluated the approaches. (Check out the code and report)

GEMM Computation in CUDA C++. I implemented the CUTLASS from GPU Technology Conference 2018 to optimize the hierarchy of GEMM with GPU architecture. The performance approaches NVIDIA cuBLAS implementation on a Turing T4 AWS instance.

PIC/FLIP Fluid Simulation. I with a schoolmate implemented the PIC/FLIP fluid simulation using libigl based on *Animating Sand as a Fluid* in ACM Transactions on Graphics. (Check out the code and video presentation)

ASA Datafest 2020. I led a group of students to apply machine learning models: GloVe and RoBERTa in time series analysis to classify sentiment on how the U.S. public responds to breaking news during the COVID-19 pandemic on Twitter. We obtained Honorable Mention among 20+ teams. (Check out the code & report)