

GONGYI SHI

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EDUCATION

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

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

- 4.0/4.0 Major GPA
- Graduate with High Distinction
- New College Council In-Course Scholarship \$2,000, highest distinction

EXPERIENCE

Software Developer Sept 2020 - Sept 2021
Echoworx Toronto, ON

- Developed the customized automation testing framework.
- Automated the testing procedures, boosting the efficiency by more than ten times.
- Integrated certification auto-generation and uploaded into the automation testing server.

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

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

PROJECTS

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.

ASA Datafest 2020. I led a group of students to apply machine learning models: GloVe, RoBERTa, and LSTM 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 mentions among 20+ teams. (Check out the [code](#) & [report](#))

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 such as Focal Loss, target hard mining, and advanced target representation.

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. (Checkout the [code](#) and [video presentation](#))

Game Rating Platform. (This is a school project) I led a group of students to build a website with React frontend and Express backend where users can find games, rate them, and leave comments to share their thoughts on them. Designed for gamers by team 042. (Checkout the [code](#) and [website](#))

RESEARCH ACTIVITIES

PCG Preconditioner with Transformer Model. Studied deep learning model to predict the preconditioner for conjugate gradient solver under the supervision of Prof. David Levin at the University of Toronto and Prof. Shinjiro Sueda at the University of Texas at Austin.

Thinking Outside of the Lab: VR Size & Depth Perception in the Wild. Studied remote VR size and depth perception under the supervision of Prof. Karan Singh, Dr. Rahul Arora, and Jiannan Li in the Dynamic Graphics Project lab at the University of Toronto.