ZHENG LI

+1(734) 510-4706 ⋄ Ann Arbor, MI ⋄ jimmyli@umich.edu⋄ https://jimmylizheng.github.io/

RESEARCH INTERESTS

Computer Networks, Mobile Systems, Machine Learning and Human Computer Interaction.

EDUCATION

University of Michigan, Ann Arbor, MI — Expected May 2024
B.S.E. Computer Science (Dual Degree) — Cumulative GPA: 3.96/4.00

Shanghai Jiao Tong University, Shanghai, China — Expected August 2024
B.S.E. Electrical and Computer Engineering (Dual Degree) — Cumulative GPA: 3.83/4.00
Minor in Entrepreneurship

PUBLICATIONS

Xuechen Zhang* and **Zheng Li*** (*: co-primary), Samet Oymak, Jiasi Chen. "Text-to-3D Generative AI on Mobile Devices: Measurements and Optimizations" *ACM SIGCOMM Workshop on Emerging Multimedia Systems*, 2023.

Zheng Li, Caiwei Chen, and Pradeep Kumar Ray. "Robotics for Autism- Robotic Technologies for ASD Treatment." *Asian Hospital & Healthcare Management*, ISSUE 57, 2022.

PRESENTATIONS

ACM SIGCOMM Workshop on Emerging Multimedia Systems, New York, NY — September 2023
Text-to-3D Generative AI on Mobile Devices: Measurements and Optimizations (oral)

RESEARCH EXPERIENCE

Research Assistant in SOTA Lab — May 2023 - Present
University of Michigan, Supervisor: Jiasi Chen, Samet Oymak — *Ann Arbor, MI*

- Published a paper in ACM SIGCOMM Workshop on Emerging Multimedia Systems (EMS). Research work won Wang Chu Chien-Wen Research Award (2 recipients in 2023).
- Evaluated model performance (including latency, memory usage, Quality of Experience etc.) of different Text-to-3D generative AIs on server GPUs and mobile GPUs.
- Designed system structure and pipelines for distributed Text-to-3D generation.
- Analyzed the inefficiency of different 3D generative models and the corresponding optimization strategies.
- Designed and optimized 3D video streaming pipelines based on 3D Gaussians.

Research Assistant in RobustNet Lab — January 2023 - Present
University of Michigan, Supervisor: Z. Morley Mao, IEEE Fellow — *Ann Arbor, MI*

- Developed a customized network performance measurement system for Starlink that can measure basic network performance parameters including round trip time, throughput etc.
- Implemented handover recognition algorithms for Low Earth Orbit satellites (LEO) handover problems based on network measurements (e.g. round trip time, loss and throughput).
- Predicted satellite handover events based on Satellite trajectory prediction using Kalman filter.
- Developed Multipath TCP simulation shell for LEO network simulation based on open source software Mahimahi.
- Reviewed current literatures about network system design of LEO.

Student Assistant of JI Centre For Entrepreneurship — July 2021 - August 2022
Shanghai Jiao Tong University, Supervisor: Pradeep Kumar Ray — *Shanghai, China*

- Constructed a low-cost autism diagnosis system using eye-tracking technologies based on computer vision.
- Reviewed current robotic technologies used in Autism diagnosis and treatment and published a paper on AHHM.

PROFESSIONAL SERVICE

Teaching Assistant of Honor Physics (VP160) May 2022 - August 2022
Shanghai Jiao Tong University, Supervisor: Mateusz Krzyzosiak *Shanghai, China*

- Hosted weekly recitation classes, office hours, graded weekly assignments and designed problems for exams.
- Awarded with Excellent Teaching Assistant Award (10 recipients each year).

Software Engineer Intern December 2021 - March 2022
TURINGO *Shanghai, China*

- Implemented testing programs for the laser routing programs.
- Designed storage pipeline for light storage chips based on Reed–Solomon-codes and quantum encryption.

SELECTED PROJECTS

MiProxy

- Built a Proxy that can handle video streaming requirements between multiple clients and servers.
- Implemented adaptive bitrate selections for video streaming to minimize buffering and improve user experience.
- Realized DNS load balancing through round-robin and distance based server selection using Dijkstra algorithm.

Distributed Searching Engine

- Created segmented inverted indexes of web pages using a pipeline of MapReduce programs.
- Developed a distributed MapReduce framework with strong fault tolerance to process large-scale web data.
- Utilized Flask framework to implement the backend server in order to generate highly customized recommendations via PageRank Algorithm and query vector similarity comparison.
- Built a scalable search engine with a user interface that returns search results like Google or Bing.

Static Router

- Implemented a static router with basic router function like packet forwarding so that it will be able to route real packets to HTTP servers.
- Implemented layer 2 and layer 3 protocols including ARP, ICMP, Ethernet etc.

HONOR & AWARDS

ACM SIGCOMM Travel Grant 2023
McLane Family Scholarship, *UMich* 2023
Roger King Scholarship, *UMich* 2023
The Jackson and Muriel Lum Scholarship (5 recipients each year), *UMich* 2022, 2023
Wang Chu Chien-Wen Research Award (2 recipients in 2023), *UMich* 2023
University Honors & College of Engineering Dean's Honor List, *UMich* Fall 2022, Winter 2023
JI Excellent Teaching Assistant Award (10 recipients each year), *SJTU* 2023
SJTU Undergraduate Excellent Scholarship Class A (top 2 %), *SJTU* 2022
The 2021 University Physics Competition Bronze Medal Winner 2022
The John Wu & Jane Sun Sunshine Scholarship, *SJTU* 2021
UM-SJTU Joint Institute Student Development Scholarship, *SJTU* 2021

SELECTED COURSES

Computer Network, Web System, Operating System, Parallel Computing, Machine Learning, Computer Security

SKILLS

Computer: C++, C, Python, CUDA, Pytorch, SQL, HTML, Linux, MATLAB, JavaScript, Verilog, LaTeX
Language: Bilingual in Chinese and English