

ZHENG LI

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RESEARCH INTERESTS

Multimedia Systems, Computer Networks, and Mobile Computing.

EDUCATION

University of Michigan

Ph.D. Computer Science and Engineering

Advisor: Jiasi Chen

B.S.E. Computer Science (Dual Degree)

Graduated with Summa Cum Laude

Ann Arbor, MI

Expected May 2029

August 2022 - May 2024

Shanghai Jiao Tong University

B.S.E. Electrical and Computer Engineering (Dual Degree)

Graduated as a Shanghai Outstanding Graduate

Shanghai, China

September 2020 - August 2024

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.

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 MAVENS Lab

University of Michigan, Supervisor: Jiasi Chen

May 2023 - Present

Ann Arbor, MI

- Implemented an efficient 3D gaussian scene delivery framework on Meta Quest 3 using WebXR and WebGL.
- Built an efficient 3D gaussian scene delivery scheduler based on viewport prediction, bandwidth prediction, and 3D gaussian significance scores.
- Measured and compared 3D scene delivery visual quality of different 3D gaussian ranking algorithm designs using PSNR and SSIM.
- Designed ranking algorithms for 3D gaussians to optimize 3D scene delivery efficiency.
- Evaluated model performance (including latency, memory usage, Quality of Experience etc.) of different Text-to-3D generative AIs on server GPUs and mobile GPUs.
- Analyzed the inefficiency of different 3D generative models and their corresponding optimization strategies in the context of mobile systems.

Research Assistant in RobustNet Lab

University of Michigan, Supervisor: Z. Morley Mao, ACM & IEEE Fellow

January 2023 - December 2023

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.

Student Assistant of JI Centre For Entrepreneurship

Shanghai Jiao Tong University, Supervisor: Pradeep Kumar Ray

July 2021 - August 2022

Shanghai, China

- Proposed 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 AHM.

PROFESSIONAL SERVICE

Instructional Aide of EECS 498/598: Mobile Interactive Multimedia Systems January 2024 - May 2024
University of Michigan, Supervisor: Jiasi Chen Ann Arbor, MI

- Hosted weekly office hours, led weekly in-class coding activities, designed and graded assignments.

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

- 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.

HONOR & AWARDS

Shanghai Outstanding Graduate (top 3%), Shanghai	2024
James B. Angell Scholar, UMich	2024
ACM SIGCOMM Travel Grant, NSF	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, UMich	Fall 2022, Winter 2023, Fall 2023
College of Engineering Dean’s Honor List, UMich	Fall 2022, Winter 2023, Fall 2023
JI Excellent Teaching Assistant Award (10 recipients each year), SJTU	2023
SJTU Undergraduate Excellent Scholarship Class A (top 2 %), SJTU	2022

SKILLS

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

EXTRA-CURRICULAR ACTIVITIES

Member of Tau Beta Pi Engineering Honor Society