YOUJIE XIE

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EDUCATION

University of California San Diego (UCSD) *Sep 2025 - Jun 2027 (Expected)*
M.S. in Computer Engineering (EC79) *La Jolla, USA*

Sun Yat-sen University (SYSU) *Sep 2021 - Jun 2025*
B.E. in Theoretical and Applied Mechanics *Shenzhen, China*
GPA: 3.5/4.0
Related Courses: Data Structures, Numerical Analysis, Artificial Intelligence, Finite Element Method, Computational Fluid Dynamics, Analytical Mechanics, Automatic Control, Space Robotics Technology.

RESEARCH & PROJECTS EXPERIENCE

A CNN-based Boundary Solver for Domain Decomposition Methods *Dec 2024 - May 2025*
Bachelor's Thesis, Supervisor: Prof. Qinghe YAO *Computational Mechanics Lab (SYSU)*

- Developed a novel CNN-based Domain Decomposition Method (CNN-DDM) to efficiently solve interface degrees of freedom in large-scale fluid dynamics simulations.
- Designed and trained a 3D CNN to replace the Schur complement system, achieving < 5 ms prediction time on GPU with $< 0.5\%$ error in 3D lid-driven cavity flow simulations.

Computer Vision-based Obstacle Perception and Ranging *Dec 2023 - Feb 2024*
Research Project, Supervisor: Prof. Yong ZHAO *Ghost-Valley AI Lab (PKU)*

- Investigated stereo vision and deep learning for obstacle perception in tunnel-like environments, building an annotated dataset and training a YOLOv8 segmentation model for real-time detection.
- Implemented a C++ solution integrating Efficient Large-Scale Stereo Matching (ELAS) with a ZED 2 stereo camera, producing disparity maps (1344×376 @ 12 fps) for real-time ranging.

Wide-field Image Stitching for 3D Measurement *Oct 2022 - Dec 2023*
Research Project, Supervisor: Prof. Xiaohu ZHANG *Aircraft Vision Perception Lab (SYSU)*

- Proposed a binocular stitching imaging model for multi-camera 3D measurement via binocular intersection solutions and implemented in a C++/Qt framework utilizing OpenCV.
- Validated system performance experimentally, achieving a 0.3153% measurement error rate in 3D measurements.

PROFESSIONAL EXPERIENCE (SELECTED)

Shenzhen A.IoT Technology Co., Ltd *Jul 2025 - Sep 2025*
Software Engineer Intern | JavaScript, Node.js, Redis, WebSocket, Express *Shenzhen, China*

- Designed and implemented dynamic load balancing for APK download servers using Redis-based health and latency metrics to ensure high availability.
- Built a real-time monitoring system with periodic health checks, Redis logging, and an interactive monitoring dashboard (HTML/JS, Socket.IO) for server status and log visualization.

TECHNICAL SKILLS

Programming Languages	C/C++, Python, Java, MATLAB, HTML/CSS, JavaScript
Machine Learning Tools	Pytorch, Tensorflow, Pandas, Numpy
Development Tools	Git, CMake, WSL, Oracle Cloud Infrastructure
Engineering Software	AutoCAD, ANSYS, Midas, LabVIEW