XIE YOUJIE

+86-13923873267 | youjie_xie25@outlook.com | youjiexie.us.kg

Education

Sun Yat-sen University **Sep 2021 – Jun 2025**
Bachelor of Engineering in Theoretical and Applied Mechanics *Shenzhen, China*

Relevant Coursework

- Linear Algebra
- Probability and Statistics
- Programming Language
- Fundamental of Electrical & Electronic Technology
- Introduction to Artificial Intelligence
- Numerical Computational Method
- Principles of Computer Engineering
- Principle of Automatic Control
- The Finite-Element Method and Programming
- Computational Fluid Mechanics

Work Experience

Ghost-Valley AI Technology (Shenzhen) Co., Ltd **Nov 2023 – Jan 2024 & Sep 2024 – Present**
Assistant Engineer (Machine Learning Engineering Intern) *Shenzhen, China*

- Contributed to the development of a subway tunnel obstacle detection and ranging system, using binocular vision and advanced AI models.
- Annotated 850 images of tunnel obstacles, creating a comprehensive dataset for training machine learning models.
- Implemented and trained a YOLOv8 segmentation model for effective obstacle detection.
- Developed a C++ solution integrating the ELAS (Efficient Large-Scale Stereo Matching) algorithm with a ZED 2 stereo camera, generating real-time disparity maps at 12 frames per second on high-resolution (1344x376p) images.
- Encapsulated the ELAS algorithm into shared libraries (.dll/.so) for cross-platform deployment and integration.

Shenzhen Academy of Disaster Prevention and Reduction **Jul 2024 – Aug 2024**
Assistant Engineer *Shenzhen, China*

- Assisted in experiments of imaging technology based on distributed acoustic sensing (DAS) fiber and background noise.
- Set up over 4,000 meters of DAS fiber, assisted in fiber splicing, and contributed to background noise data collection.
- Participated in the compilation of the detection report for the seismic safety detection and alarm system of the China Spallation Neutron Source, focusing on vibration data visualization and anomaly analysis using MATLAB.

Research & Projects Experience — Highlights (More on youjiexie.us.kg)

Modular Wide-field Image Stitching Model and Measurement System **Oct 2022 – Dec 2023**
Team Leader *Sun Yat-sen University*

- Led the development of a multi-camera system for high-precision 3D measurement using image stitching techniques.
- Designed and implemented an innovative binocular stitching imaging model to enable precise distance measurement through binocular intersection solutions.
- Utilized the OpenCV library to execute key image processing algorithms, including image rectification, SIFT-based feature detection, feature matching, and image stitching.
- Built a Qt-based software application in C++ for multi-camera control, synchronized image capture, real-time image processing, and distance measurement.
- Verified system accuracy through experiments, achieving a measurement error rate of 0.3153% in 3D measurements.

2D Lid-driven Cavity Flow Simulation Project **Jun 2024**
Team Coder *Sun Yat-sen University*

- Developed a Python-based computational fluid dynamics simulation for 2D lid-driven cavity flow at high Reynolds.
- Implemented and optimized iterative algorithms, achieving convergent solutions at Re=7500 on a 150x150 grid after 542,404 iterations.
- Conducted comprehensive analysis and visualization of simulation results, validating the computational model.

Technical Skills

Languages: *(Proficient)* C/C++, Python, MATLAB, HTML/CSS; *(Familiar)* JavaScript, x86 Assembly
Web Development & System Administration: Nginx, SSL certification, CDN deployment, Oracle Cloud
Development Tools: Git, CMake
Engineering Software: AutoCAD, ANSYS, Midas, LabVIEW, MATLAB

Honors & Awards

- 2nd Prize, 2023 Guangdong Contemporary Undergraduate Mathematical Contest in Modelling
- 3rd Prize, 2024 Mathematical Contest in Modelling