

# WEIZHEN (Alan) ZHOU

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## PROFESSIONAL SUMMARY

**Background:** Result oriented MS candidate in CE NYU. Specializing in programming, computer science and deep learning. Solid software engineer with strong programming, analytical and large language model skills.

**Strength:** Have a wide range of projects experience related to computer science, programming, deep learning and machine learning, with strengths in fast learning, effective communication, innovative thinking and critical thinking.

### Technical Skills:

**Programming Language:** Python (Pytorch, OpenCV), Java, C, C++, SQL (MySQL/Oracle), MATLAB, Go, HTML, RISC-V, R

**Skills:** Software Engineering, Large Scale Dataset, 3D Rendering/Modeling/Reconstruction, Machine Learning Model, Database

**Application:** Git, Linux Shell, Slurm, Oracle, MeshLab, Motive, Latex, Amplide, NI Multisim, Inventor, CaptureReality

**Interest:** Software Development, Machine Learning, Computer Vision, Competitive Programming

## EDUCATION

### New York University

New York, US

Master of Science in Computer Engineering

Sep 2024 – May 2026(Expected)

*Relevant Coursework: Computer Architecture (C++, C, RISC-V), Introduction to Java, Database (SQL, Python, Java)*

### ShanghaiTech University

Shanghai, China

Bachelor of Engineering in Computer Science

Sep 2020 – Jun 2024

*Relevant Coursework: Algorithm and Data Structure (C++), Probability and Statistics, Deep Learning, Computer Vision, Machine Learning, Natural Language Process, Artificial Intelligence, Numerical Optimization, Algorithm Design and Analysis, Digital Circuit, Signals and Systems*

## WORK EXPERIENCE

### Gaze-Guided Long-term Hand-object Interaction Prediction

Shanghai, China

*Key Laboratory of Intelligent Perception and Human-Machine Collaboration*

Mar 2023 – Jan 2024

*Core Member, Supervisor: Assistant Professor Jingya Wang*

- Built a multi-camera capturing system, including motion capture cameras and eye tracker, multiple side views and ego view, with full calibration and synchronization across all devices.
- Create object collections for datasets and corresponding 3D rendering models, utilizing Meshlab and 3D scanner.
- Capture large-scale datasets, conduct frame by frame rendering and precise annotation, utilizing PyTorch, OpenCV.
- Train diffusion architecture model on generated datasets utilizing remote cluster.
- Validate dataset's accuracy and usability, demonstrating robust data alignment and high-quality annotations.
- Complete a paper and design a model that significantly improved the accuracy of predicting hand-object interactions, achieved state-of-art performance.

### Software Engineer Internship

Shanghai, China

*Shanghai ScenAuto Co. Ltd.*

Jul 2022 - Sep 2022

- Develop software to measure the 3-D coordinates of changing stockpiles, using two moving lidar scanners.
- Develop data communication software with PLC (SIMENS), utilizing the Modbus-TCP protocol.
- Develop historical data storage using MySQL.
- Develop dynamic 3-D graphics of the stockpiles, rendering each area in a different color based on data from the control system.

## PROJECT EXPERIENCE

### Reinforcement Learning based Meta-Path Excavation on the Yelp Dataset

Shanghai, China

*Core Member, supervised by Associated Prof. Kewei Tu*

Nov 2022 – Jan 2023

- Conducted research on a meta-path selection algorithm based on reinforcement learning.
- Experimented with Yelp data to demonstrate the effectiveness of DQN-based meta-path selection strategy.
- Successfully reproduced results from a top conference(NIPS) paper, achieving strong model performance.

### Gaussian Blur Algorithm Acceleration from the Perspective of Computer Architecture

Shanghai, China

*Team Leader, supervised by Associated Prof. Chundong Wang*

May 2022 – June 2022

- Optimized the Gaussian blur algorithm utilizing Computer Architecture optimizing skills like multi-threading, SIMD instructions, loop unrolling, and cache blocking technique.
- Optimized the Gaussian blur algorithm by leveraging C language loading characteristic for image preprocessing.
- Optimized the Gaussian blur algorithm, reducing processing time for large images from 20 seconds to less than 6 seconds.

### Design of Solar Panel Dual-Axis Tracking System

Shanghai, China

*Core Member, Training Project, supervised by Associated Prof. Junrui Liang*

Dec 2020 – Jan 2021

- Researched dual-axis solar tracking algorithms and implemented them using Arduino, C language and .
- Designed circuits and 3D model fabricated light sensors, utilizing 3D printing technology, and 3D modeling software Inventor.
- Assembled the overall framework for solar panels, design circuit utilizing power distribution board.
- Design and implemented a high-precision 360-degree solar tracking system for solar panels.