

Wenjie Song

Graduate Software Engineer | C/C++, Java, Python & SQL

Sydney, NSW | 0491 162 482 | swj107830307@gmail.com | Full working rights in Australia

PROFESSIONAL SUMMARY

First Class Honours graduate in Computational Data Science with strong foundations in C/C++, Java, Python, SQL, object-oriented design, data structures and algorithms. Built end-to-end software and research systems across developer tooling, REST APIs, databases, automated pipelines and AI/3D applications. Comfortable breaking down ambiguous problems, debugging across code and data, learning unfamiliar technologies and turning requirements into reliable working implementations.

TECHNICAL SKILLS

Programming: C/C++, Java, Python, SQL

Software Engineering: object-oriented design, data structures & algorithms, REST APIs, FastAPI, testing/debugging, Git, Linux/UNIX, Bash

Systems, Data & AI: PostgreSQL, SQLite, relational databases and data modelling, PyTorch, TensorFlow/Keras, scikit-learn, OpenCV, Open3D, DINOv2, ONNX Runtime

EDUCATION

The University of Sydney

Bachelor of Advanced Computing (Honours), Computational Data Science
Dean's List | First Class Honours | WAM: 84 | Honours mark: 88

Sydney, NSW

Feb 2023 - Jun 2026

EXPERIENCE

Research Assistant - MeshFlow / Mesh-Based 3D Generation

2026 - Present

The University of Sydney

- Develop modular Python/PyTorch research software for mesh generation and refinement, implementing geometry processing, evaluation and automated validity checks.
- Trace invalid geometry across data, algorithm and code paths; compare outputs and document technical findings to support research decisions.

Research Intern - World Models

Jun 2026 - Present

The University of Sydney | Supervisor: A/Prof. Chang Xu

- Build reusable, configuration-driven PyTorch components for sequential-data preparation, model training and evaluation; investigate environment dynamics and future-state prediction through controlled experiments.

Honours Research Project - Fragment-Based 3D Object Reconstruction

Jun 2025 - Jun 2026

The University of Sydney | Supervisor: A/Prof. Weidong Cai

- Designed and implemented an end-to-end Python/PyTorch system for 3D reconstruction from unordered point-cloud fragments, including SE(3) pose estimation, training and evaluation; improved performance by ~3 points on standard data and 14 points on a complex hard set over prior SOTA.

SELECTED PROJECTS

Image-to-Minecraft Building Generation Mod | Python, PyTorch, Java, ONNX Runtime, WebGL2

2026 - Present

- Developing an on-device system that converts a single building image into a structured building description using a shared DINOv2-S/14 backbone with lightweight heads for global attributes, facade segmentation, row/bay profiles and cell/material attributes.
- Export evaluated models to int8 ONNX for CPU inference (~100 MB), then use a deterministic Java engine and parametric component library to generate blocks in a Fabric/NeoForge mod for Minecraft 1.21.1.
- Built a GPU WebGL2 synthetic-data factory with engine-exact labels (~386 images/min); completed global heads reach 96-98% top-1 accuracy and facade segmentation reaches 75.0 mIoU.

AI Short Drama & Anime Generation Platform | Python, FastAPI, REST APIs, RAG

2026

- Designed and built an end-to-end platform integrating LLM, image, video and audio services through a modular workflow canvas and REST APIs.
- Added RAG-based story memory that retrieves character, setting and plot context to support continuity across episodes.

3D Data Processing Pipeline | Python, Open3D, NumPy

2025

- Converted 542 OBJ meshes into standardised 2,048-point datasets through a repeatable batch pipeline with validation, consistent naming, progress logs and failure handling.

LLM-Assisted Codebase Visualisation & Debugging Tool | Python, software analysis

2026

- Built a repository analysis tool that maps file/class/method relationships, visualises dependencies and feature paths, and performs change-impact analysis to support debugging, code review and safer changes in large codebases.

AWARD

Second Prize, Provincial Olympiad in Informatics, China - algorithmic problem solving, data structures, graph algorithms, dynamic programming and computational thinking