Wei-Cheng Wang

Los Angeles, CA | +1 (213) 326-7282 | wwang759@usc.edu | linkedin.com/in/wei-cheng-wang | dw1209.github.io

Education

University of Southern California — Los Angeles, California
Master of Science in Computer Science | GPA: 3.78/4.0 — **Aug 2024 - May 2026**

National Yang Ming Chiao Tung University — Hsinchu, Taiwan
Bachelor of Science in Computer Science | GPA: 4.0/4.3 — **Sep 2019 - Jun 2023**

Technical Skills

Programming Languages: C, C++, Python, JavaScript, SQL
Full-Stack Web Development: HTML/CSS, React, Vite, Flask, REST APIs, SQLAlchemy, MySQL
Systems & Cloud: Linux/Unix, Bash, Docker, AWS (S3), Render, Gunicorn, CI/CD (GitHub Actions), Git/GitHub
Distributed & Performance: OpenMP, MPI, CUDA, OpenFlow, Open vSwitch, Ryu
Data & Machine Learning: PyTorch, NumPy, pandas, scikit-learn, BeautifulSoup
Software Engineering: Data Structures & Algorithms, Object-Oriented Programming (OOP), Linting (ESLint), Debugging, Performance Optimization, Code Review, Version Control

Work Experience

Advantech — Taipei, Taiwan
Software Development Intern — **Jun 2022 - Sep 2022**

- Modernized a ResNet-based image classification model on Ampere GPUs in PyTorch using configurable loaders
- Deployed a MobileNetV3-based Faster R-CNN object detector in PyTorch to an internal development portal
- Implemented a Detectron2 RetinaNet model for solder-joint inspection by converting LabelMe annotations to COCO format, enabling deployment on Windows in production

Projects

ParkMarks | HTML5, CSS3, JavaScript, React, Vite, Git, GitHub Pages, GitHub Actions (CI/CD)

- Built a React app to explore and track US national parks with an interactive map and clickable markers
- Implemented a park details panel with an image, established date, visited status, visit dates, and star ratings
- Developed search and status filters plus a progress dashboard for visited count and completion percentage
- Added shareable deep links via URL state for direct navigation and browser history support
- Shipped updates to GitHub Pages using an artifact-based GitHub Actions pipeline with concurrency control

DreamMesh: Blender Plugin for AI-Driven 3D Scene Generation | Python, CUDA, Blender API, Git

- Created a Blender plugin driven by generative AI to automate 3D scene creation from text prompts
- Implemented Stable Diffusion image generation and integrated Stable Fast 3D to convert 2D images into meshes
- Accelerated model inference with CUDA and optimized JSON-based scene parsing for asset placement
- Collaborated on a four-person international team, using Git to build a modular pipeline covering text-to-mesh, scene assembly, rigging, animation, and 3D scene configuration workflows for simulation-like environments

Wi-Fi Rate Control on Ryu and OVS | Python, Bash, Ryu, Open vSwitch

- Built a system-level Wi-Fi rate control service on Linux using Ryu and Open vSwitch over OpenFlow and TCP/IP
- Automated 802.11 telemetry collection (MAC, IP, RSSI, SNR) and injected metrics into OpenFlow metadata
- Parsed metrics in the Ryu controller to apply SNR-based rate and MCS selection, enforcing QoS and flow rules
- Improved throughput and latency while reducing controller overhead via batched rule updates, demonstrating practical experience in distributed control systems

Accelerating K-means Clustering with Parallel Implementation | Python, Bash, C++, OpenMP, MPI, Git

- Architected three parallel K-means algorithms for distributed execution using OpenMP, MPI, and a hybrid model
- Wrote shell scripts to automate dataset generation, runtime logging, and parallel execution across configurations
- Benchmarked large-scale datasets of 20 million points with MPI, achieving up to 7.4× speedup
- Collaborated with a three-person team on a Git-based codebase to evaluate parallel efficiency and scalability while profiling performance bottlenecks across architectures