Wenjun "Dolores" Miao

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Professional Summary

Systems engineer & researcher who ships. Led performance optimization and cross-platform ports for million-seller titles, then advanced HPC/PL work on GPU numerical reliability and OpenMP tuning. Publications in leading venues (ISC'23–HPDC'25). Expert in C/C++, Python, LLVM/Clang, OpenMP, CUDA/HIP; delivers scalable, production-quality solutions. Available **April 2026**.

Work Experience

Lawrence Livermore National Laboratory - Grad Student Intern (Summers 2022–2024)

- Published in leading HPC/PL venues (ISC'23–HPDC'25); built tools for numerical reliability & performance across CPU/GPU (LLVM/Clang, OpenMP, CUDA/HIP); outcomes adopted internally with peer-reviewed artifacts.

Virtuos Games - Software Engineer → Lead → Assistant Technical Director (2007–2021)

Scope & leadership (cumulative across roles)

- Co-led technical direction on proposals and design docs; set rendering/engine architecture and porting strategy.
- Managed multi-disciplinary teams; owned schedules, reviews, and growth plans.
- Delivered feasibility studies, feature implementations (rendering/shaders/engine/jobs), and critical CPU/GPU/I/O optimizations.

Shipped titles & role highlights

- **FINAL FANTASY XII THE ZODIAC AGE (2015–2020):** Guided major technical decisions; designed/implemented rendering modernization and porting framework; shader pipeline work; material/post-process collaboration; CPU/GPU/I/O optimization and stabilization.
- **FINAL FANTASY X|X-2 HD Remaster (2012–2016):** Led data serialization; built modern rendering pipeline paths; resolved 64-bit/endian portability; CPU/GPU optimizations; drove fixes for high-impact defects; contributed to key technical decisions
- **BioShock & XCOM 2 Collections (2019–2020):** Defined end-to-end porting strategy; implemented rendering API and UE3 transition solutions; targeted CPU/GPU performance improvements.
- **Tales from the Borderlands (2020, Switch):** Led engine upgrade and multi-platform republishes; owned Switch port planning and delivery.

Recognition & enablement

- **Awards:** Virtuos Best Employee (2014, 2015).
- **Training:** Led internal courses on C# and intro to performance optimization.

Education

University of California, Davis — Ph.D., Computer Science (Expected March 2026) · Research: PL/Compilers; Software Testing; Numerical Reliability; Performance; Parallel/Distributed & Heterogeneous Computing

Fudan University — B.Eng., Communication Science & Engineering (2007) · Specialization: Computer Networks

Selected Publications

- *FloatGuard: Efficient Whole-Program Detection of Floating-Point Exceptions in AMD GPUs.* **HPDC '25**.
- *An Automated OpenMP Mutation Testing Framework for Performance Optimization.* **Parallel Computing (PARCO), 2024**.
- *Input Range Generation for Compiler-Induced Numerical Inconsistencies.* **ICS '24**.
- *MUPPET: Optimizing Performance in OpenMP via Mutation Testing.* **PMAM @ PPoPP '24**.
- *Expression Isolation of Compiler-Induced Numerical Inconsistencies in Heterogeneous Code.* **ISC High Performance '23**.

Honors & Awards

- **Director's Excellence in Publication Award (Best Student Paper)** — LLNL, Aug 2024
- **Hans Mauer Award for Best Research Paper** — ISC High Performance, May 2023
- **Best Remaster — FINAL FANTASY XII THE ZODIAC AGE** — Game Informer, Jan 2018

Skills

Languages: C/C++, Python, C#, Bash · **Parallel/HPC:** OpenMP, CUDA, HIP, MPI · **Compilers/Analysis:** LLVM/Clang (libTooling, passes), GCC, NVCC/HIPCC; sanitizers; perf, VTune, Valgrind · **GPU/Graphics:** Nsight, ROCm/rocprof; shaders (HLSL/GLSL), UE3, UE4, Unity; PC/console ports (PlayStation, Xbox, Switch) · **DevOps/Build:** Git, Jenkins, GitHub Actions, MSBuild, CMake, Make, Docker · **Content/Platforms:** Maya; Linux/Windows; Slurm · **Languages:** English, Mandarin, Cantonese