Wesley Zheng

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Education

University of California, Berkeley — Berkeley, CA
M.S. in Electrical Engineering and Computer Science — *August 2026 – May 2027*
- **Research Focus:** Systems with AI, advised by Professor Alvin Cheung.
- **Relevant Coursework:** Computer Systems, UI Design.

University of California, Berkeley — Berkeley, CA
B.A. in Computer Science and Applied Mathematics, Minor in Data Science — GPA: 3.98 — *August 2022 – May 2026*
- **Honors:** EECS Honors, Dean's List, Honors to Date.
- **Relevant Coursework:** Computer Architecture, Operating Systems, Machine Learning, Artificial Intelligence, Database Systems, Computer Vision, NLP, Numerical Analysis.

Experience

AI Engineering Intern — June 2026 – August 2026
BillionToOne — *Menlo Park, CA*
- Reduced manual review from an average of 1 hour to 5 minutes by building an internal ensemble of image classifiers and random forests that jointly rank and classify proprietary biological data.
- Achieved a 98% true-positive rate on internal evaluation, enabling the ensemble to replace manual review as an internal tool.

Undergraduate Course Staff — August 2023 – Present
UC Berkeley — *Berkeley, CA*
- Lead Teaching Assistant for DATA 102: Data, Inference, and Decisions, CS 188: Artificial Intelligence, DATA 100: Principles and Techniques of Data Science, DATA C8: Foundations of Data Science, and CS 189: Machine Learning.
- Created assignments and discussion materials, maintained course website and textbook, and led discussions and office hours for thousands of students.

Undergraduate Research Assistant/Mentor — August 2023 – May 2026
UC Berkeley, Algoverse — *Berkeley, CA*
- *Cross-Platform SQL Rewrite Optimization* project under Professor Alvin Cheung. Focusing on enabling users to generalize their rewrite rules for SQL optimization across distributed database platforms such as Apache Calcite and CockroachDB.
- *Forecasting Adversarial Multi-Agent Behavior in Dense Crowds Using Real-Time CoT in Multimodal Models*. Developed a real-time multimodal CoT pipeline for video-based crowd prediction.
- *Human Strategy Updating via Peer Advice* project under Professor Park Sinchaisri. Modeled how humans update strategies after peer advice exchange using inverse reinforcement learning and random forest classification.

Applied AI Engineer Intern — May 2024 – July 2024
Power Meta Corp. — *Irvine, CA*
- Built Dockerized inference pipelines to eliminate nondeterminism and ensure reproducibility.
- Optimized distributed runtimes and designed stress-testing workflows for robust, low-latency deployment.

Projects

PintOS | *C* — January 2026 – May 2026
- Extended an x86 OS with thread scheduling, synchronization, and system calls, debugging in QEMU/Bochs simulators.

Neural Network Framework Implementation | *Python, NumPy* — January 2025 – May 2025
- Built a modular neural network framework with vectorized forward/backward propagation and gradient-based optimization.

RookieDB | *Java, MongoDB, SQL* — August 2024 – December 2024
- Implemented a relational database engine with indexing, join algorithms, query optimization, concurrency control, and recovery.

Technical Skills

Programming Languages: Python, Java, C, SQL, Swift, R, JavaScript, Shell, VBScript, RISC-V, Scheme
Frameworks & Libraries: PyTorch, torchvision, OpenCV, Pillow, Scikit-learn, XGBoost, LightGBM, SciPy, joblib, pandas, NumPy, Matplotlib, Tokenizers, Requests, Pytest
Developer Tools: Git, Docker, MongoDB, SQLite, CockroachDB, CMake, GDB, Valgrind, Cursor, Claude Code, Codex, VS Code, IntelliJ, RStudio, PyCharm, Jupyter
Spoken Languages: Mandarin Chinese (Native)