Jingqiao Zhao

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Education

- **University of California, Berkeley** — Berkeley, CA
  B.A. in Computer Science, GPA: 3.6 / 4.0 — *Aug 2020 – Dec 2024*
  - **Relevant Coursework**: OOP, Data Structures, Algorithms, AI, Machine Learning, Operating Systems, Databases, Cybersecurity, System Architecture, Software Engineering.
- **University of Michigan, Ann Arbor** — Ann Arbor, MI
  M.S. in Bioinformatics — *Aug 2025 – May 2027*
  - **Relevant Coursework**: Mathematical Modeling, Computational System, Deep learning, Applied Statistics.

Skills Summary

- **Coding Languages**: Python, Java, C, C#, SQL, JavaScript, TypeScript, HTML/CSS, Bash, x86, Go
- **Tools/Frameworks**: PyTorch, Django, React.js, Docker, Node.js, GIT, FAST API, PostgreSQL, Linux, AWS

Experience

- **BigHat Bioscience** — San Mateo, CA
  Software Engineer Co-op — *Jan 2025 – Present*
  - **Audit-Trail UI**: Built a React/TypeScript interface and Python + Falcon API that query DynamoDB to surface deleted-record history, now used by 35+ scientists and cutting audit lookup time from hours to seconds
  - **Serverless Event Pipeline**: Containerized and maintained AWS Lambda consumers for Kinesis streams, ensuring a reliable, traceable flow of experimental events throughout the LIMS
  - **Hands-Free CI/CD**: Authored BuildSpec workflows that build, test, and publish dependency-pinned Docker images in under 5 minutes, eliminating a potential 30-minute manual release
  - **ORM Standardization**: Migrated 80+ Pydantic and SQLAlchemy models to a common object-relational mapper base pattern, reducing boilerplate by 5% and simplifying compliance audits
- **School of Pharmacy Bioengineering and Therapeutic Sciences, UCSF** — San Francisco, CA
  Student Research Intern — *Mar 2023 – Sep 2023*
  - **MD Simulation and Data Analysis**: Automated GPU job scheduling for 200+ molecular dynamics runs, saving 10 engineer-hours per week and enabling RMSD, trajectory, and pairwise distance validation at scale
  - **Markov State Modeling**: Built Markov State Models to capture the dynamics of intrinsically disordered proteins and identify key conformational transitions
  - **Simulation Advancements**: Integrated FRET data into simulations, improving model precision and insights into biomolecular condensates
  - **Impact**: Enhanced computational efficiency, reducing processing times and streamlining resource usage
- **Biological Systems and Engineering, Lawrence Berkeley National Laboratory** — Berkeley, CA
  Student Backend Engineer — *Aug 2022 – Feb 2023*
  - **Retrosynthesis Algorithm**: Co-designed and implemented an object-oriented retrosynthesis algorithm that generates polyketide synthase enzyme-complex sequences for target molecules
  - **ClusterCAD Backend**: Integrated the algorithm and upgraded ClusterCAD backend modules using Python and Django
  - **Impact**: Algorithm adopted by multiple LBNL research teams in their web-based retrosynthesis tools

Projects

- **"Quest-Flow" Interactive Quest Builder (Next.js, React, TypeScript, JavaScript)**: Developed a web app for creating game-like achievements and workflows. Implemented dynamic node, edge management, state persistence, graph algorithms and responsive design. Google Gemini is utilized for intelligent recommendations to enhance functionality.
- **"SimpleDB" Working Database with essential features (Java, B+ Tree, Join/Query, Concurrency)**: Implemented a fully functional relational database with features such as B+ tree indexed data, Joins, Query optimizer, Queuing, Multigranular locking, and Recovery.
- **"Pacman" AI for the game Pacman (Python, AI, Search, Reinforcement Learning, Inference)**: Built different versions of Pacman agents AI each using distinctive strategies, such as expectimax search, Q-learning, and Particle Filtering based on Bayes Net inference.