Jingqiao Zhao

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Education

- **University of California, Berkeley** — Berkeley, CA
  Bachelor of Arts: Computer Science; GPA: 3.6 — *August 2020 - Dec 2024*
  Courses: *OOP, Data Structure, Data Science, Algorithm, Artificial Intelligence, Machine Learning, Database, Operating System, Cybersecurity*

- **University of California, Berkeley** — Berkeley, CA
  Bachelor of Arts: Molecular and Cell Biology; GPA: 3.7 — *August 2020 - Dec 2024*
  Courses: *Organic Chemistry, Proteomics, Bacterial Pathogenesis, Biophysical Chemistry, Genetics*

Skills Summary

- **Languages**: Python, Java, C, C++, C#, SQL, JavaScript, Bash, x86, Go
- **Tools/Frameworks**: PyTorch, Django, React.js, Next.js, Tailwind, GIT, MySQL, PostgreSQL Unix/Linux, AWS
- **Interests**: AR/VR, Web Development, Machine Learning, AI, Computational Biology, Data Science

Experience

- **School of Pharmacy Bioengineering and Therapeutic Sciences, UCSF** — San Francisco, CA
  Student Research Intern — *Mar 2023 - Sep 2023*
  - **MD Simulation & Data Analysis**: Implemented automated solutions using bash scripts managing concurrently multiple GPU jobs. Elevated the quality of data interpretation by streamlining robust analysis, such as RMSD, Trajectory, and pairwise distance calculations, to validate every simulation.
  - **Markov State Modeling**: Applied advanced statistical techniques to develop Markov State Models, capturing complex system dynamics and identifying key transitions and states of Intrinsically Disordered Proteins.
  - **Simulation Advancements**: Contributed to new simulation methodologies by integrating FRET data, enhancing model precision and enabling insights into complex condensates.
  - **Impact**: Boosted computational efficiency through innovative approaches, leading to quicker processing times, streamlined workflows, and better resource management.

- **Computational Science Department, Lawrence Berkeley National Laboratory** — Berkeley, CA
  Student Backend Engineer — *Aug 2022 - Feb 2023*
  - **Retrosynthesis Algorithm**: Contributed to the object-oriented design and implementation of a retrosynthesis algorithm using Python, which generates corresponding PKS enzyme complex sequences given target molecules.
  - **ClusterCAD Backend**: Helped incorporate the retrosynthesis algorithm and upgrade ClusterCAD website's backend modules using python on Django.
  - **Impact**: The retrosynthesis algorithm has already been used by multiple LBNL research teams in their web-based retrosynthesis tools.

- **Geopogo** — Berkeley, CA
  Software Engineer Intern — *May 2022 - Aug 2022*
  - **MagicLeap2 AR UI Prototype**: Designed a Unity-based prototype for the MagicLeap console, enabling seamless interaction with 3D objects using a singular console interface.
  - **Raycasting System**: Developed a raycasting system with a "gravity gun" feature, enhancing architects' interaction with AR objects, inspired by the game Gmod.
  - **Impact**: Enhanced the user experience, leading to the system's adoption by multiple architects for showcasing their 3D models.

Projects

- **"Gitlet" Version Control System (Java)**: Implemented a version control system that mimics some of the features of the popular system Git (add, commit, push, merge, etc.) through serialization. The project focuses intensively on data structures like HashMap and file manipulation.
- **"SimpleDB" Working Database with essential features (Java, B+ Tree, Join/Query, Concurrency)**: Implemented a fully functional 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)**: Implemented different versions of Pacman agents AI each using distinctive strategies, such as expectimax search, Q-learning, and Particle Filtering based on Bayes Net inference.