Jingwen Gu
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Education

- **University of California, San Diego** — Expected Mar 2027
  Data Science & Math-Computer Science (Honors)*(Double Major)* — *GPA: 3.93*
  Selected coursework: Measure Theory, Real Analysis, Abstract Algebra, Linear and non linear optimization, Algorithm and Data Structure, Machine Learning, Applications in data science.

Skills

Proficient Programming Tools Python, Pytorch, C++, Java, git, Linux, Pandas.
Familiar Programming Tools Polars, CUDA, Triton, flask.

Research

- **Shang Data Lab** — San Diego, CA
  Research Intern — *July 2025-Dec 2025*
  - **RLVR-Adam**: Lead the research conducting intensive experiments and mathematical derivations from the views of **information geometry**, proving low entropy token's policy gradient norm is mistakenly amplified $\sim 10^5$ times by Adam optimizer by studying into the entropy gating effect on the **direction** and **magnitude** of RLVR policy gradient updates. proving that the optimized Adam has a **200% GNS** increase.
  - **Super-Poker**: Open-sourced the reconstructed card simulation engine for card games from **OOP structure** in popular card engines to a **flat, array-based engine** for **10X** faster rollout speed in RL training for LLMs, avoiding the computation costs in deep copy, which is extremely useful in algorithms such as MCTS.
- **UCSD Math Honors Program** — San Diego, CA
  Individual Researcher — *Oct 2025 - Present*
  - **Reinforcement Learning theory research**: Worked on optimizing complexity bound for RLHF problems from **exp(R)** complexity to **linear complexity** in a Multi-Armed Bandits (MAB) setting, utilizing advanced math tools such as **martingale** and **Bernstein inequality**.
  - **Empirical experiments**: Utilized large-scale empirical experiments, proving the **3X efficiency boost**.

Experience

- **Student Foundation Investment Committee – Quantitative Division** — San Diego, CA
  Vice President, Leading Engineer — *October 2024 – Present*
  - **Analyst Hub Platform**: Developed a collaborative analyst hub enabling **100+ analysts** to rapidly access market news and real-time sentiment insights. Integrated **SerpAPI**, agentic **ChatGPT**, and a **Flask-based backend**. The system delivers **150+ automated reports weekly**.
  - **High-Performance Backtesting System**: Led the construction of a **millisecond-level** backtesting system using system optimization techniques including **Polars** and Python **multiprocessing** with **50% efficiency boost**. Enabled real-time visualization of key portfolio indicators and integrated **modern portfolio optimization algorithms** to dynamically suggest structural improvements.
  - **Allocation quantitative research**: Utilized intensive experiment backed-up **multi-factor momentum-based** model to scientifically and quantitatively optimize the risk exposure of a **$1.5 million** endowment fund for UCSD student foundation.
- **SGLang** — Remote
  Individual Contributor — *December 2025 – Now*
  - **Open Source Contributor**: Contributed to SGLang community by implementing new features and fixing critical bugs such as *TopK* value overflow and *lm_head.weight* overwrite bugs.
- **Dinghang Capital** — Shenzhen, China
  Software Developer Intern — *June 2024 – September 2024*
  - **Temporal Graph Neural Network**: Fine-tuned a **temporal GNN** to extract structured temporal information and relational data from **10K+ pages** of unordered news, business documents, Twitter posts, and financial reports for future use in **risk control** and **trading assistance**