

**Weili Cao**  
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## **Education**

*Master of Science in Computer Science*, GPA: 3.940  
University of California San Diego

2023.9-2025.6

*Bachelor of Science*, Double Major: Computer Science and Mathematics, GPA: 3.673  
University of California San Diego

2019.9-2023.6

## **Publications**

1. **Weili Cao\***, Jianyou Wang\*, Youze Zheng, Longtian Bao, Qirui Zheng, Taylor Berg-Kirkpatrick, Ramamohan Paturi, Leon Bergen. "Single-Pass Document Scanning for Question Answering" *Submitted to CONFERENCE ON LANGUAGE MODELING (COLM), 2025* (Under review)

2. Jianyou Wang\*, **Weili Cao\***, Kaicheng Wang, Xiaoyue Wang, Ashish Dalvi, Gino Prasad, Qishan Liang, Hsuan-lin Her, Mingwang, Qin Yang, Gene W. Yeo, David E Neal, Maxim Khan, Christopher D. Rosin, Ramamohan Paturi, Leon Bergen. "EvidenceBench: A Benchmark for Extracting Evidence from Biomedical Papers" *Submitted to CONFERENCE ON LANGUAGE MODELING (COLM), 2025* (Under review)

3. Jianyou Wang\*, **Weili Cao\***, Longtian Bao, Youze Zheng, Gil Pasternak, Kaicheng Wang, Xiaoyue Wang, Ramamohan Paturi, Leon Bergen. "Measuring Risk of Bias in Biomedical Reports: The RoBBR Benchmark" [[arXiv: 2411.18831](https://arxiv.org/abs/2411.18831)]

4. Jianyou Wang\*, Kaicheng Wang\*, Xiaoyue Wang\*, **Weili Cao**, Ramamohan Paturi, Leon Bergen. "IR2: Information Regularization for Information Retrieval." *LREC-COLING 2024, Selected as Oral*

5. Xiaoyue Wang\*, Jianyou Wang\*, **Weili Cao\***, Kaicheng Wang\*, Ramamohan Paturi, Leon Bergen. "BIRCO: A Benchmark of Information Retrieval Tasks with Complex Objectives" [[arXiv: 2402.14151](https://arxiv.org/abs/2402.14151)]

- Integrated in [Massive Multilingual Text Embedding Benchmark\(MMTEB\)](#)

6. Jianyou Wang\*, Yongce Li\*, **Weili Cao\***, Yang Yue. "A Scalable and Modular Framework for Training Provably Robust Large Transformer Models via Neural Network Duality," [[paper](#)]

## **Research and Development Experience**

*Research Assistant*, [Laboratory for Emerging Intelligence](#), UCSD, August 2023-present

- Supervisor: Prof. Leon Bergen, Prof. Ramamohan Paturi
- Work on State Space Models, Long Context Modeling, Large Language Models, Biomedical Benchmarks, Information Retrieval.

*Research Intern*, OPPO InnoPeak Technology, Inc, Palo Alto, CA, June-August 2022

- Use Unity to build and test apps on Oculus VR Device

*Verification Engineer Intern*, OPPO InnoPeak Technology, Inc, San Diego, CA, June-August 2021

- Build 5G/LTE Log Analysis Tool, and optimize cellular system performance

## **Talks & Presentations**

"Unique Games Conjecture," Lightning Talk at the Society of Undergraduate Mathematics Students (SUMS) association, UCSD, April 19, 2023

"[Theory of Contrastive Learning in NLP](#)," Talk at weekly reading seminar hosted by Laboratory for Emerging Intelligence, UCSD, September 27, 2023

## **Relevant Course Work**

- Computer Science: Language Model Reasoning, Advanced Data-Driven Text Mining, Semidefinite Programming, Robust Statistics, Advanced Algorithms and Complexity, Convex Optimization
- Mathematics: Numerical Analysis, Statistics, Real Analysis, Fourier Analysis, Basic Topology

### **Skills and Expertise**

- Programming experience in Python, Java, C, C++, and Assembly
- Experience with tools: GIT, GitHub, Android Studio, JUnit, Espresso, Robolectric, ZenHub, Unity
- Proficient in solving mathematical and statistical problems using MATLAB and R-Studio

### **Awards and Distinctions**

- Prototype paper out of 193 students, UCSD Convex Optimization course 2023
- Member of International Association of Chinese Magicians
- PADI Open Water, Advanced Open Water, and Rescue Diver Certification
- AIDA Freediving Level 3 Certification