

Weili Cao
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Education

Ph.D. in Computer Science
Duke University

2025.9-Present

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” *COLM, 2025 (Oral)*

2. Jianyou Wang*, **Weili Cao***, Kaicheng Wang, Xiaoyue Wang, Ashish Dalvi, Gino Prasad, Qishan Liang, Hsuan-lin Her, Ming Wang, 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” *COLM, 2025*

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” *EMNLP, 2025*

4. Jianyou Wang*, Kaicheng Wang*, Xiaoyue Wang*, **Weili Cao**, Ramamohan Paturi, Leon Bergen. “IR2: Information Regularization for Information Retrieval.” *LREC-COLING 2024*

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, Duke NLP, August 2025-present

- Advisor: Prof. Shuyan Zhou, Prof. Bhuwan Dhingra
- LLM Agent, Long Context Modeling

Research Assistant, [Laboratory for Emerging Intelligence](#), UCSD, August 2023-June 2025

- Advisor: Prof. Leon Bergen, Prof. Ramamohan Paturi
- State Space Models, Long Context Modeling, 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