

# IAN JORQUERA

Colorado State University  
Department of Mathematics  
Weber 223

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[Website](#)

## ACADEMIC INTERESTS

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Frame Theory, Structure of frames over finite fields, Category Theory and applications, Algorithm Design, Functional Programming, Complexity Theory

## EDUCATION

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### Colorado State University

- Ph.D., Mathematics, Gem Fellow, (expected graduation: 2027).
- Advisor: Emily J. King

### Colorado State University

- Masters, Mathematics, Gem Fellow, (expected graduation: 2024).
- Advisor: Emily J. King

### University of Colorado Boulder

- B.A., Computer Science, *Summa Cum Laude* (2022).
- B.A., Mathematics, *with Honors* (2022).
- Minor, Applied Mathematics (2022)

## POSITIONS

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### Current

#### Colorado State University

- GEM Fellow, Graduate Teaching Assistant. 8/2022 - present

### Previous

#### Oak Ridge National Laboratory

- GEM Fellow, Research Intern, Programming Systems Group. 6/2022-8/2022
- Advisor: Pedro Valero-Lara

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<sup>1</sup>Updated September 19, 2024

## PUBLICATIONS AND PREPRINTS

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2. **Evaluating performance and portability of high-level programming models: Julia, Python/Numba, and Kokkos on exascale nodes (2023)** (joint with William F. Godoy and Pedro Valero-Lara and T. Elise Dettling and Christian Trefftz and Thomas Sheehy and Ross G. Miller and Marc González Tallada and Jeffrey S. Vetter and Valentin Churavy). accepted. (<https://doi.org/10.1109/IPDPSW59300.2023.00068>)
1. **Mixed-Precision S/DGEMM Using the TF32 and TF64 Frameworks on Low-Precision AI Tensor Cores(2023)** (joint with Pedro Valero-Lara and Frank Liu and Jeffrey S. Vetter). accepted. (<https://doi.org/10.1145/3624062.3624084>)

## ATTENDED CONFERENCE

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2. Recent Progress on Optimal Point Distributions and Related Fields, ICERM, Brown University, June 2024. Funded by Conference.
1. Groups, Nilpotence, and Tensors, Colorado State University, April 2023.

## SEMINAR TALKS

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5. *Subobject Classifiers and Defining a Topos*. Colorado State University, Applied Category Theory Seminar, April 2024.
4. *F-Algebras and Catamorphisms in Scala*. Colorado State University, Applied Category Theory Seminar, November 2023.
3. *Simple Types*. Colorado State University, Applied Category Theory Seminar, January 2023.
2. *The DisCoCat (Distributional Compositional Categorical) model of meaning*. Colorado State University, Applied Category Theory Seminar, October 2022.
1. *Examples of Functors and Natural Transformations*. Colorado State University, Applied Category Theory Seminar, September 2022.

## SEMINARS ORGANIZED

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1. *Greenslopes Graduate Seminar*. Co-Organizer, Colorado State University, August 2024 - December 2024.

## TEACHING EXPERIENCE

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### Colorado State University

- Instructor, Math 160 (Fall 2024).
- Assistant Coordinator, Math 160 (Spring 2024).
- Instructor, Math 160 (Fall 2023).
- Teaching Assistant, Math 369 (Summer 2023).
- Teaching Assistant, Math 155 (Spring 2023).
- Instructor, Math 160 (Fall 2022).

### University of Colorado Boulder

- Undergraduate Course Assistant, CSCI 3104

## OUTREACH

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- Volunteer, CSU Math Day (November 2023).

## AWARDS

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- GEM PhD Fellow, Sponsored by Oak Ridge National Laboratory and Colorado State University (2022).