Ralph Sarkis
he/him

cv@ralph.sarkis.cc
ralphs16.github.io

PUBLICATIONS

International Conferences:

- Gabriele Lobbia, Wojciech Różowski, Ralph Sarkis, and Fabio Zanasi. *Quantitative Monoidal Algebra: Axiomatising Distance with String Diagrams*. In: MFCS '25.
- Ralph Sarkis and Fabio Zanasi. *String Diagrams for Graded Monoidal Theories with an Application to Imprecise Probability*. In: CALCO '25.
- Matteo Mio, Ralph Sarkis, and Valeria Vignudelli. *Beyond Nonexpansive Operations in Quantitative Algebraic Reasoning*. In: LICS '22.
- Daniela Petrişan and Ralph Sarkis. *Semialgebras and Weak Distributive Laws*. In: MFPS '21.
- Matteo Mio, Ralph Sarkis, and Valeria Vignudelli. *Combining Nondeterminism, Probability and Termination: Equational and Metric Reasoning*. In: LICS '21.

Journals:

- Matteo Mio, Ralph Sarkis, and Valeria Vignudelli. *Universal Quantitative Algebra for Fuzzy Relations and Generalised Metric Spaces*. In: LMCS.

EDUCATION

Theoretical Computer Science (PhD)	*September 2024*
ENS de Lyon	Lyon, France
Thesis title: *Lifting Algebraic Reasoning to Generalized Metric Spaces*. Available here.	
Theoretical Computer Science (Master)	*June 2021*
ENS de Lyon	Lyon, France
Funded by two 10000€ scholarships from Labex MiLyon.	
Joint Honours in Math and Computer Science (BSc)	*April 2019*
McGill University	Montreal, QC

WORK EXPERIENCE

Academic Positions:

- Postdoctoral research fellow at PPLV (University College London).   *October 2024 – Ongoing*
  - Work on diagrammatic reasoning for probabilistic programs with Fabio Zanasi.
- Research internship at IRIF (Université Paris Cité).   *February – June 2021*
  - Work on weak distributive laws supervised by Daniela Petrişan.
- Research internship at LIP (ENS de Lyon).   *April – July 2020*
  - Work on algebraic presentations of monads supervised by Matteo Mio and Valeria Vignudelli.

Teaching:

- Assistant at University College London.   *2025*
  - Grading reports and presentations for a directed reading course.
- Teaching assistant at ENS de Lyon.   *2021 – 2024*
  - Tutorials for *Semantics and Verification* and *Proofs and Programs* (total of 100 hours).
- Teacher and organizer for a category theory student seminar.   *2019 – 2023*
  - Lectures, course notes, and homework for a semester-long introduction to category theory at McGill and ENS de Lyon.
  - Supervision of two cohorts of student lecturers at ENS de Lyon.
- Teaching assistant at McGill University.   *September – Decemeber 2018*
  - Office hours and grading for *Theory of Computation*.

Outreach:

- Mini-course at North Bridge House Senior Hampstead   *July 2025*
  - Organizing and teaching a 10 hours course (over 2 days) on ZX calculus.
- Volunteer animator at MMI.   *2023 – 2024*
  - Workshops and exhibition *Dans ma cuisine* (on math and CS) for students ages 13 to 18.
- Volunteer internship supervisor for UPBS.   *April 2022, 2023, and 2024*
  - Week-long initiation to research on string diagrams for students ages 16 to 17.
- Instructor and teaching assistant at DMA.   *July 2015 and 2017*
  - Programming and electronics summer camp classes for students ages 8 to 17.

INVITED AND CONTRIBUTED TALKS

- *Towards Quantitative Diagrammatic Reasoning*, MFCS conference.   *August 2025*
- *Imprecise Probability with Graded String Diagrams*, CALCO conference.   *June 2025*
- *Graded String Diagrams*, OASIS seminar.   *March 2025*
- *Quantitative Monoidal Algebra*, Bellairs workshop *Quantitative Reasoning*.   *March 2025*
- *Lifting Algebraic Reasoning to Generalized Metric Spaces*, online CT Zulip seminar.   *August 2024*
- *Quantitative Algebraic Semantics*, InfoMaths doctoral school days.   *June 2024*
- *Universal Quantitative Algebra*, LIMD team seminar.   *October 2023*
- *Universal Quantitative Algebra*, LoVE team seminar.   *September 2023*
- *Lifting Algebraic Presentations to* **Met**, Bellairs workshop *Quantitative Logic and Reasoning*. *May 2023*
- *I show you my favorite diagrams (the 3rd is ULTRA rare!)*, McGill grad seminar.   *October 2022*
- *Tape diagrams*, ACT adjoint school.   *July 2022*
- *Je vous montre mes plus beaux diagrammes (le 3e va vous surprendre !)*, CGS general public talk. *May 2022*
- *Quotienting a Monad via Projective Algebras*, RAMiCS conference.   *November 2021*
- *Semialgebras and Weak Distributive Laws*, MFPS conference.   *September 2021*
- *Modelling Nondeterminism, Probability, and Termination*, LiCS conference.   *July 2021*
- *Modelling Nondeterminism, Probability, and Termination*, CaCS workshop.   *June 2021*

ACADEMIC SERVICES

- I was a peer reviewer for several prestigious conferences (FSCD 2023, FoSSaCS 2023, LiCS 2024, ICALP 2025, MFPS 2025, MFCS 2025, and CSL 2025) as well as the journal *Logical Methods in Computer Science* (LMCS) and the *Polynesian Journal of Mathematics*.