

PUBLICATIONS

International Conferences:

- 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](#).
- Ralph Sarkis and Fabio Zanasi. *String Diagrams for Graded Monoidal Theories with an Application to Imprecise Probability*. In [CALCO '25](#).

Journals:

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

Preprints:

- Gabriele Lobbia, Wojciech Różowski, Ralph Sarkis, and Fabio Zanasi. *Quantitative Monoidal Algebra: Axiomatising Distance with String Diagrams* (2025).

EDUCATION

Theoretical Computer Science (PhD) ENS de Lyon Thesis title: <i>Lifting Algebraic Reasoning to Generalized Metric Spaces</i> . Available here .	September 2024 Lyon, France
Theoretical Computer Science (Master) ENS de Lyon Funded by two 10000€ scholarships from Labex MiLyon.	June 2021 Lyon, France
Joint Honours in Math and Computer Science (BSc) McGill University	April 2019 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 – December 2018
 - Office hours and grading for *Theory of Computation*.

Outreach:

- 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

- *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 and journals including FSCD 2023, FoSSaCS 2023, LiCS 2024, the journal *Logical Methods in Computer Science* (LMCS), the *Polynesian Journal of Mathematics*, ICALP 2025, MFPS 2025, and MFCS 2025.