

CURRICULUM VITÆ

Contact details

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Research area

Algebraic topology (homotopical algebra, operads), Discrete geometry (polytopes).

Employment

2022-2025 **The University of Melbourne**, Melbourne, Australia, *Research Fellow*
Mentor : Marcy Robertson

Studies

2019-2022 **Université Sorbonne Paris Nord**, Villetaneuse, France, *PhD in Mathematics*
Advisors : Eric Hoffbeck et Bruno Vallette
2018-2019 **Université Sorbonne Paris Nord**, Villetaneuse, France, *M.Sc. Fundamental Mathematics*
2015-2018 **Université de Montréal**, Québec, Canada, *B.Sc. Mathematics and Physics*

Research stays

November 2023 **Centre for Quantum Mathematics**, Odense, Denmark.
February 2023 **Max Planck Institute for Mathematics**, Bonn, Germany.
Sept.-Oct. 2022 **University of Copenhagen**, Copenhagen, Denmark.
Spring 2022 **Mittag-Leffler Institute**, Stockholm, Sweden.
December 2021 **Centre de Recerca Matemàtica**, Barcelona, Spain, with Vincent Pilaud.
Summer 2021 **LaCIM**, Université du Québec à Montréal, Canada, with Hugh Thomas.

Prizes and Awards

2024	Andrew Sisson Early-Career Researcher Award (9100\$ AUD)
2023	Prix solennel de thèse - Chancellerie des universités de Paris (10000€ EUR)
2023	Prix de thèse Galilée - Université Sorbonne Paris Nord (500€ EUR)
2022	Andrew Sisson Early-Career Researcher Award (7500\$ AUD)
2019-2022	Europe Horizon 2020 Marie Skłodowska-Curie Cofund PhD Fellowship
2021-2022	Natural Sciences & Engineering Research Council of Canada PhD Scholarship

Languages

French	<i>Mother tongue</i>
English	<i>Fluent</i>
Danish	<i>Conversational</i>
German	<i>A2</i>

PUBLICATIONS

Publications

- *The diagonal of the operahedra*, Advances in Mathematics, 2022, 108494, <https://doi.org/10.1016/j.aim.2022.108494>.
- *The diagonal of the multiplihedra and the tensor product of A_∞ -morphisms*, with Thibaut Mazuir, Journal de l'École polytechnique - Mathématiques, vol. 10, 2023, 405-446, <https://doi.org/10.5802/jep.221>.
- *Topological proofs of categorical coherence*, with Pierre-Louis Curien, to appear in Cahiers de topologie et géométrie différentielle catégoriques, <https://arxiv.org/abs/2302.07391>.

Preprints

- *Cellular diagonals of permutahedra*, with Bérénice Delcroix-Oger, Vincent Pilaud and Kurt Stoeckl, submitted, <https://arxiv.org/abs/2308.12119>.
- *Steenrod operations via higher Bruhat orders*, with Nicholas J. Williams, submitted, <https://arxiv.org/abs/2309.16481>. Poster at FPSAC 2024.
- *Kashiwara–Vergne solutions degree by degree*, with Zsuzsanna Dancso, Iva Halacheva and Marcy Robertson, submitted, <https://arxiv.org/abs/2310.20420>.
- *Term rewriting on nestohedra*, with Pierre-Louis Curien, submitted, <https://arxiv.org/abs/2403.15987>.
- *Framed polytopes and higher categories*, with Anibal M. Medina-Mardones and Arnau Padrol. Poster at FPSAC 2024.

Other publications

Mathematics and architecture.

- *Closing the Open System : Review of Nicholas Schöffer's 'La Tour Lumière Cybernétique' (1973)*, with Nina Stener Jørgensen, Footprint, vol. 16, no. 2, 2022, 135-144, <https://doi.org/10.7480/footprint.16.2.6069>.

RESEARCH ACTIVITIES

Invited conference speaker

October 2024	Higher Structures in Prague II , Prague, Czech Republic.
March 2023	56th Spring Topology and Dynamics Conference , Memphis, United States.
February 2023	Higher Geometric Structures along the Lower Rhine , Utrecht, Netherlands.
January 2023	Homotopy Theory meets Polyhedral Combinatorics , Barcelona, Spain.
September 2022	Higher Structures in Prague , Prague, Czech Republic.

Invited seminar talks (recent)

May 20, 2024	Topology Seminar , Melbourne, Australia.
January 30, 2024	Séminaire Quantique , Strasbourg, France.
January 25, 2024	Algebra & Topology Seminar , Copenhagen, Denmark.
January 10, 2024	Algebra & Geometry Seminar , Stockholm, Sweden.
December 12, 2023	Categorical Symplectic Geometry Seminar , Berlin, Germany.
December 1, 2023	NMSU Geometry & Topology Seminar , Las Cruces, United States.
September 4, 2023	Topology Seminar , Melbourne, Australia.
May 22, 2023	Quantum Mathematics Research Seminar , Odense, Denmark.
May 18, 2023	Copenhagen-Jerusalem Combinatorics Seminar , Copenhagen, Denmark.
March 24, 2023	Pure Mathematics Seminar , Melbourne, Australia.
March 13, 2023	Topology Seminar , Melbourne, Australia.
February 10, 2023	Seminar on Abstract Homotopy Theory , Bonn, Germany.

Organized seminars

Fall 2024	Topology Seminar , Melbourne, Australia.
Fall 2024	Graduate Topology Seminar , Melbourne, Australia.

Organized working groups

Fall 2023	Model categories , Melbourne, Australia.
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TEACHING & OUTREACH

Courses

- The University of Melbourne, 2024, 64h.
 - Linear algebra (first year)
- ESIEE Paris, 2018-2019, 32h.
 - Introduction to Chaos Theory (third year)

Tutorials

- The University of Melbourne, 2023, 64h.
 - Linear Algebra (first year)
- Université Sorbonne Paris Nord, 2021-2022, 64h.
 - Complex analysis (third year)
 - Mathematics for physicists (second year)
- Université Sorbonne Paris Nord, 2020-2021, 64h.
 - Complex analysis (third year)
 - Mathematics for physicists (first year)
 - Real analysis (first year)
- Université Sorbonne Paris Nord, Année 2019-2020, 64h.
 - Complex analysis (third year)
 - Algebra II (second year)
 - Introduction to mathematical structures (first year)
 - Real analysis (first year)
- ESIEE Paris, 2018-2019, 32h.
 - Fourier analysis (third year)
 - Linear algebra (first year)
 - Set Theory (first year)

Outreach

- *Pure Math Open Day*, Melbourne, Australia, August 20, 2023.
- *My Thesis in 7 minutes*, Galileo Prize Ceremony, Villetaneuse, France, May 26, 2023.
- *Synthetic differential geometry*, IRCAM, Centre Pompidou, Paris, February 4, 2023.