

Giovanni Ferrer

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Theoretical Mathematics 3rd year PhD Student at the Ohio State University 2020-(2026)

Citizenship status: U.S. citizen

Education

2015 – 2020 **University of Puerto Rico, Mayagüez Campus**, B.S. in Pure Mathematics, minor in computational linguistics, GPA: 3.85, Magna Cum Laude.

Experience

- 2020 **GOALS**, Groundwork for Operator Algebras Lecture Series, student participant.
- 2019 **SRQP**, Summer Research Opportunities Program, at the Ohio State University, working on *Classifying Bi-Invertible Connections arising from the Small-Index Subfactor Classification Program*.
- 2018 **The Ohio State University**, summer research, working on *Classifying Module Categories for Generalized Temperley-Lieb-Jones \ast -2-Categories*.
- 2017 **University of Connecticut**, summer research program, working over the course of 10 weeks on *Differentiability on Higher Dimensional Sierpinski Gaskets*.
- 2017 – 2018 **Rumbo Ex**, a program funded by the U.S. Department of Education to help broaden educational opportunities for hispanic alumni, mathematics advisor.
- 2019 **The Ohio State University**, SAMMS Program, participated as the teaching assistant for the offered topology course.
- 2018 **The Ohio State University**, SAMMS Program, summer school for undergraduate students from underrepresented minorities who are considering advanced studies in mathematics beyond the baccalaureate degree.
- 2019 **UPRMath Student Colloquium**, student learning seminar, main organizer.
- 2019 **NLP UPRM**, natural language processing investigation at the University of Puerto Rico, working on *Syntactic Analysis based on Hidden Markov Models*.

Awards

- 2020 **Distinguished University Fellowship**, at the Ohio State University.
- 2020 **Patrick S. Osmer Fellowship**, at the Ohio State University.
- 2020 **Karl Friedrich Gauss Award**, at the University of Puerto Rico - Mayagüez.
- 2019 **PR-LSAMP research scholarship**, Puerto Rico Louis Stokes Alliance for Minority Participation, undergraduate research scholarship for students in STEM.

Competencies

Languages Spanish (mothertongue), English (fluent), German (intermediate)
Computer Comfortable with C++ and L^AT_EX, beginner in Prolog, Wolfram Mathematica, and Manim

Peer reviewed journal articles

- 2019 Classifying Module Categories for Generalized Temperley-Lieb-Jones \ast -2-Categories (with Roberto Hernandez-Palomares), *Internat. J. Math.* **31** (2020), no. 04, 2050027, [MR4098904](#), [arXiv:1905.00471](#)
- 2019 Harmonic Gradients on Higher Dimensional Sierpinski Gaskets (with Luke Brown, Gamal Mograby, Luke G. Rogers, and Karuna Sangam), *Fractals* **28** (2020), no. 06, 2050108, [arXiv:1908.10539](#)
- 2022 Gray-categories model algebraic tricategories, *Theor. Appl. Categ.* **38** (2022), no. 29, pp 1136-1155., [arXiv:2203.03748](#)
- 2023 3D Koch-Type Crystals (with Alejandro Vélez-Santiago), *J. Fractal Geometry* (to appear 2023), [arXiv:2302.10628](#)

Current projects

- 2022 Groundwork for operator algebraic tricategories
- 2022 Unitary dual 2-functors for unitary multitensor 2-categories (with Brett Hungar and David Penneys)
- 2022 Unitary condensation (with Quan Chen, Brett Hungar, David Penneys, Sean Sanford)