

THIAGO HOLLEBEN

hollebenthiago@dal.ca · [website](#)

EDUCATION

Universidade Federal do Rio de Janeiro, Brazil

march 2016 - july 2017 (interrupted)

Major in Mathematics

Universidade Federal do Rio de Janeiro, Brazil

july 2017 - 2020

Bachelor in Applied Mathematics

Universidade Federal do Rio de Janeiro, Brazil

august 2019 - december 2021

Master's degree in Mathematics

Dissertation title: [The log-concavity of chromatic polynomials](#).

Advisor: Seyed Hamid Hassanzadeh

Dalhousie University, Canada

september 2022 - current

PhD in Mathematics

Advisor: Sara Faridi

ACADEMIC ACHIEVEMENTS

Professor Michael Edelstein Memorial Graduate Prize (2023)

Annual prize awarded to a graduate student who shows great promise in the mathematical sciences.

Honours undergraduate research project (2018)

Received an award for best undergraduate research project on the algebraic and combinatorial properties of Edge Ideals.

Advisor: Seyed Hamid Hassanzadeh

PAPERS

Thiago Holleben. (2023). The weak Lefschetz property and mixed multiplicities of monomial ideals. [arxiv link](#)

Susan M. Cooper, Sara Faridi, Lisa Nicklasson, Adam Van Tuyl, Thiago Holleben. (2023). The weak Lefschetz property of whiskered graphs. [arxiv link](#)

Sara Faridi, Thiago Holleben. Homological invariants of ternary graphs. (preprint, to be submitted October 2023).

Thiago Holleben. Rees algebras and Lefschetz properties of squarefree monomial ideals. (in progress).

T. Chau, A. Duval, S. Faridi, T. Holleben, S. Morey, L. Şega. Powers of a simplex. (in progress).

PRESENTATIONS

Rees algebras and Lefschetz properties of squarefree monomial ideals. Stockholm Commutative Algebra seminar. 26th October 2023 (online talk)

Lefschetz properties of squarefree monomial ideals. 10th HLF. September 2023 (poster, lightning talk)

Lefschetz properties of squarefree monomial ideals. BrianFest. August 2023 (poster)

Homological Invariants of ternary graphs. 34o CBM. July 2023 (poster)

The weak Lefschetz property and mixed multiplicities of monomial ideals. MSRI/SLMath Summer School in Notre Dame. May 2023 (poster)

Degree of the inverse of a birational monomial map. MSRI/SLMath Summer School, Notre Dame. May 2023 (lightning talk)

The weak Lefschetz property and mixed multiplicities of monomial ideals. Lefschetz workshop, Fields institute. May 2023 (talk)

Lefschetz properties and mixed multiplicities via hyperplane arrangements. ICTP workshop. May 2023 (poster)

The weak Lefschetz property and mixed multiplicities of squarefree monomial ideals. ICTP summer school. May 2023 (talk)

Homological invariants of ternary graphs. BIRS workshop. April 2023 (talk)

Homological invariants of ternary graphs. CAAC 2023. January 2023 (poster)

The log-concavity of chromatic polynomials. UFRJ. July 2022 (talk, in portuguese)

Exploring examples with Macaulay2. UFRJ. July 2022 (talk, in portuguese)

Hilbert functions in Combinatorics. UFRJ. July 2022 (talk, in portuguese)

A combinatorial interpretation of the primary decomposition of edge ideals. UFRJ undergraduate student seminar. 2019 (talk, in portuguese)

A brief dictionary between Algebra and Combinatorics. SIAC-UFRJ 2018 (talk, in portuguese)

LEADERSHIP POSITIONS

Organizer of Week of Applied Mathematics and Mathematical Engineering (SEM²Ap)

Organized virtual Week of Applied Mathematics and Mathematical Engineering (SEM²Ap) in 2020

More info on: [Webpage](#), [Youtube](#), [Instagram](#)

Teaching assistant at Dalhousie

Fall of 2022 and Winter of 2023

Teaching assistant at UFRJ

First semester of 2019

Teaching assistant at UFRJ

First and second semester of 2018

Organizer of weekly student seminar at UFRJ

Organized weekly seminars at UFRJ during the second semester of 2019.

EVENTS ATTENDED

10th Heidelberg Laureate Forum 2023 (Heidelberg University)

BrianFest (University of Nebraska-Lincoln)

34o Colóquio Brasileiro de Matemática (IMPA)

Commutative Algebra and its Interaction with Algebraic Geometry (University of Notre Dame) 2023

Workshop on Lefschetz Properties in Algebra, Geometry, Topology and Combinatorics. (Fields Institute) 2023

Workshop on Commutative Algebra and Algebraic Geometry in Prime Characteristics. (ICTP) 2023

School on Commutative Algebra and Algebraic Geometry in Prime Characteristics. (ICTP) 2023
Interactions Between Topological Combinatorics and Combinatorial Commutative Algebra (BIRS) 2023
Combinatorial Algebra meets Algebraic Combinatorics 2023. (Waterloo University) 2023
Combinatorial Algebra meets Algebraic Combinatorics 2020. (Dalhousie University) 2020
1st Joint Meeting Brazil-France in Mathematics. (IMPA) 2019
32o Colóquio Brasileiro de Matemática. (IMPA) 2019
SIMCARA. (USP São Carlos) 2019
Syzygies, from Theory to Applications. (UFPB) 2019
XXV Escola de Álgebra. (UNICAMP) 2018

SKILLS

Programming: Macaulay2, Sage, Python, Javascript, Julia