

# ALEJANDRO SANTACRUZ HIDALGO

## PhD candidate in Mathematics

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## EDUCATION

Ph.D. in Mathematics

**University of Western Ontario**

📅 London, Ontario, Canada, Expected 2024

M.Sc. in Mathematics

**University of Western Ontario**

📅 London, Ontario, Canada, 2020

M.Sc. in Mathematics

**National University of Colombia**

📅 Bogotá, Colombia, 2017

B.Sc. in Mathematics

**National University of Colombia**

📅 Bogotá, Colombia, 2015

## TEACHING EXPERIENCE

Course instructor

**University of Western Ontario**

📅 September 2023 – December 2023 📍 London, Ontario, Canada

### Courses taught

- Calculus 1000A.

Graduate Teaching Assistant

**University of Western Ontario**

📅 September 2019 – Present

📍 London, Ontario, Canada

- Led tutorial sessions for the students both in-person and online.

Lecturer

**National University of Colombia**

📅 February 2016 – June 2017

📍 Bogotá, Colombia

### Courses taught

- Integral calculus.
- Calculus in several variables.
- Differential equations.

## SCIENTIFIC EVENTS

The 19th prairie analysis seminar

**Kansas state University**

📅 November 2023

📍 Manhattan, Kansas, United States of America

- Role: Poster presentation
- Topic: Monotonicity and abstract Hardy inequalities: the case  $p = 1$ .

Graduate student seminar

**University of Werstern Ontario**

📅 Fall 2023

📍 London, Ontario, Canada

## RESEARCH INTERESTS

My mathematical research is in the area of real and functional analysis, more specifically, in topics associated with function spaces, interpolation of operators and Fourier analysis. So far my research goal has been to develop a theory that will enable the powerful tools associated with monotone functions to be applied to functions on spaces with no fixed order. The long term goal of my research is to extend these tools to more general spaces and investigate their connections with other areas of mathematics such as abstract harmonic analysis and partial differential equations.

## TEACHING INTERESTS

Teaching mathematics is a process that involves preparation and experience that motivates the student towards the material. It is my responsibility to facilitate the best education to students. It is important to relate concepts with problems and applications, to think about how each idea in mathematics is generated by combining traditional pedagogical approaches with active learning ideas.

## LANGUAGES

English

Spanish

German



## CERTIFICATIONS

- Western certificate in university teaching and learning

- Role: Organizer
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## Spring school on analysis: Function spaces and applications XII

**Charles University**

📅 May 2023

📍 Paseky nad Jizerou, Czech Republic

- Role: Speaker
  - Topic: Hardy operators and monotonicity in general spaces.
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## Twelfth Ohio river analysis meeting

**University of Cincinnati**

📅 March 2023

📍 Cincinnati, Ohio, United States of America

- Role: Speaker
  - Topic: Monotonicity in measure spaces and Hardy inequalities.
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## 2022 Winter Meeting

**Canadian Mathematical Society**

📅 December 2022

📍 Toronto, Canada

- Role: Speaker
  - Topic: Down spaces over a measure space with an ordered core.
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## 12th International Conference of Non-linear Analysis, Function Spaces and Applications

**Czech Technical University**

📅 May 2022

📍 Prague, Czech Republic

- Role: Speaker
- Topic: Monotonicity in ordered measure spaces.