

# Oisín Flynn-Connolly

## Curriculum Vitae

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Google Scholar

Semantic Scholar

### Employment

- 11/2024–  
11/2027 **Postdoctoral researcher in mathematics and theoretical computer science**,  
*Leiden Institute of Advanced Computer Science, Leiden University*, Researching applications of homotopy theory to optimization algorithms and machine learning in the research group of Henning Basold.

### Education

- 10/2021–  
10/2024 **PhD in mathematics**, *Université Sorbonne Paris-Nord*, Thesis “Higher commutativity in algebra and algebraic topology” ([pdf](#), Reports [1](#), [2](#)) supervised by Grégory Ginot, Included a two-month stay with Fernando Muro in Seville (02/2024-03/2024)
- 09/2019–  
06/2020 **M2 “Arithmétique, Analyse, Géométrie”**, *Université Paris-Saclay*, Mention bien, Thesis: “Homotopy theory of the little  $n$ -discs operad” ([pdf](#)) supervised by Felix Wierstra and Grégory Ginot
- 09/2015–  
06/2019 **B.A. (Honors) in mathematics**, *Trinity College Dublin*, First class honours. Gold medallist., Thesis: “Universal enveloping pre-Lie algebras” supervised by Vladimir Dotsenko

### Selected Awards

- 2021 Marie Skłodowska-Curie Action *Cofund* PhD research fellowship
- 2019 Trinity College Dublin gold medal for academic performance in final exams.
- 2017 Trinity Foundation Scholarship (‘schols’)
- 2017 First place team, second place individual, Irish Intervarsity Mathematical Competition
- 2014 & 2015 Represented Ireland at the International Mathematical Olympiad

### Publications

- 2023 Dotsenko, V., Flynn-Connolly, O.: Three Schur functors related to pre-Lie algebras, *Math. Proc. Camb. Phil. Soc.*

### Preprints

- Flynn-Connolly, O., Moreno-Fernández, J., Wierstra, F.: A recognition principle for iterated suspensions as coalgebras over the little cubes operad, *submitted*

- Flynn-Connolly, O., Moreno-Fernández, J.: Higher order Massey products for algebras over algebraic operads, *submitted*
- Flynn-Connolly, O.: An obstruction theory for strictly commutative algebras in positive characteristic, ArXiv preprint 2404.16681

## To appear

- Flynn-Connolly, O.: A higher Hochschild-Konstant-Rosenberg Theorem and the Deligne conjecture
- Flynn-Connolly, O.: Homotopically,  $E_\infty$  algebras do not generalise commutative dg-algebras
- Flynn-Connolly, O.: A  $p$ -adic de Rham complex

Remark: These are currently chapters of the author's PhD thesis intended to be adapted into separate articles for publication.

## Teaching

Spring 2022 **Calculus II**, *Université Sorbonne Paris Nord*  
 Spring 2022 **Euclidean and non-Euclidean geometry**, *Université Sorbonne Paris Nord*  
 Autumn 2018 **Maths for STEM: Trinity Access Program**, *Trinity College Dublin*  
 & Spring  
 2019

## Upcoming Research Talks

Sep 2024 *Strictly commutative algebra in positive characteristic*, seminar of Université de Toulouse

## Research Talks

Aug 2024 *Higher invariants in homotopy theory*, 37th Annual Meeting of the Irish Mathematical Society, Queen's University Belfast  
 Feb 2024 *Strictly commutative algebra in positive characteristic*, seminar of Seville University  
 Jan 2024 *Strictly commutative algebra in positive characteristic*, seminar of Stockholm University  
 Nov 2023 *The geometry of iterated suspensions*, seminar of Université de Lille  
 Nov 2023 *p-adic homotopy theory*, seminar of Universidad de Malaga  
 Oct 2023 *The geometry of iterated suspensions*, seminar of Université Sorbonne Paris Nord

## Poster Presentations

Aug 2023 *Corecognition for iterated suspensions*, 36th Annual Meeting of the Irish Mathematical Society, University of Limerick  
 July 2023 *Corecognition for iterated suspensions*, Young Topologists Meeting, EPFL, Lausanne

## Popularization Talks

Apr 2024 *Groebner bases and automated theorem-proving*, PhD student seminar of USPN  
Nov 2022 *Introduction to infinity-categories*, topology PhD student seminar of USPN

## Academic Service

Refereed for Boletín de la Sociedad Matemática Mexicana

## Other Work Experience

06/2018–07/2018 **Research Intern**, *University College Dublin*, Project “Random matrices, genus expansions and the symmetric group”, Worked with Prof. Neil O’Connell  
06/2017–07/2017 **Research Intern**, *Trinity College Dublin*, Project “The category of quasi-parabolic vector bundles”, Worked with Prof. Sergey Mozgovoy  
2016–2019 **Trainer**, *Olympiad camps*  
09/2016–06/2018 **Secretary**, *Dublin University Mathematical Society*  
09/2017–06/2018 **Teaching Assistant**, *School of Mathematics, Trinity College Dublin*  
09/2020–01/2022 **Tutor for Irish secondary school students**, *Trinity Academy*

## Language Skills

English Mother tongue  
French Professional capacity (have lectured and taught through it)

## Programming Skills

Typesetting  $\text{\LaTeX}$  , HTML (intermediate), CSS (beginner)  
Scientific Computation Python, Sage (intermediate), Haskell, C, C++ (beginner)

## References

References available on request