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Oisín Flynn-Connolly

Curriculum Vitae

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_∞ 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 & Spring 2019 **Maths for STEM: Trinity Access Program**, *Trinity College Dublin*

Upcoming Research Talks

Oct 2024 *Corecognition for iterated suspensions*, Rencontre 2024 de Topologie algébrique (the French annual topology conference), Université de Toulouse

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

Research Talks

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

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 LaTeX , HTML (intermediate), CSS (beginner)

Scientific Computation Python, Sage (intermediate), Haskell, C, C++ (beginner)

References

References available on request