Personal Details

- Languages Italian (native language), Spanish (native language), English (fluent), Catalan (elementary), German (A1).
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Positions

2023-2025 **Postdoc**, Institute für Diskrete Mathematik & Geometrie. TU Wien. Vienna. Funded by POCOCOP, ERC Synergy Grant No. 101071674. Funded by the European Research Council.

Education

- 2019-2023 **PhD in Pure Mathematics**, Imperial College London. Admin Roth Scholarship. Supervisors: Prof. David Evans, Dr. Charlotte Kestner. Thesis: Measures and amalgamation properties in ω -categorical structures.
 - 2018 Summer Research Project, University of Oxford.
- (July-Sept.) Topic of research: The Separation of Right Angled Artin Groups (geometric group theory). Supervisor: Dr. Richard Wade. University of Oxford.
- 2015-2019 Master of Mathematics and Philosophy, University of Oxford, Worcester College. Part A and B: First Class. Part C: First Class. (PartA&B correspond to my undergraduate studies). Dissertation in mathematics: Categoricity for Totally Transcendental Theories; with Prof. Ehud Hrushovski. Thesis in philosophy: The metaontology of thin objects; with Prof. James Studd.
- 2010- 2015 Liceo Scientifico Guido Castelnuovo (Scientific High School), Firenze. Short thesis on cartography, irregular perspectives and their mathematics.

Preprints & Articles

- 2022 On the non-measurability of ω -categorical Hrushovski constructions. ArXiv:2208.06323. Submitted.
- 2022 Invariant Keisler measures for ω -categorical structures. ArXiv:2211.14628. To appear in: Journal of Symbolic Logic.
- 2024 When invariance implies exchangeability (and applications to invariant Keisler measures). Joint work with Samuel Braunfeld and Colin Jahel. ArXiv:2408.08370. Submitted.

Papers in preparation

- 2024 **Minimal operations over permutation groups**. Joint work with Michael Pinsker. In preparation.
- 2024 **Minimal semigroup topologies in endomorphism monoids of countable structures**. Joint work with Javi de la Nuez Gonzales and Zaniar Ghadernezhad. Ongoing work.
- 2024 **Binary operations over permutation groups**. Joint work with Carl-Fredrik Nyberg Brodda. Ongoing work.

2024 When invariance implies exchangeability II. Joint work with Artem Chernikov, Samuel Braunfeld, and Colin Jahel. Ongoing work.

Talks

- Jul 2024 Exchangeability of Consistent Random Expansions. Midsummer combinatorial Workshop XXIX, Prague.
- May 2024 Minimal operations over permutation groups. 105 Arbeitstagung Allgemeine Algebra AAA105, Prague.
- Apr 2024 When measures don't care about structure (and when they do). University of Vienna, Model Theory seminar.
- Mar 2024 Minimal operations over permutation groups. Algebra seminar. Korean Institute of Advanced Studies.
- Mar 2024 When measures don't care about structure (and when they do). Logic seminar. Yonsei University.
- Nov 2023 Measures in higher arity homogeneous structures. Algebra seminar, TU Wien.
- Sep 2023 Measures in homogeneous 3-hypergraphs. Model Theory Workshop. Wroclaw.
- Jun 2023 Measures in ternary homogeneous structures. SEEMOD. University of Oxford.
- Jan 2023 Invariant Keisler measures in simple ω -categorical structures. Carnegie Mellon University logic seminar.
- Nov 2022 Universally measure zero non-forking formulas in simple omega-categorical Hrushovski constructions. 7th French-Kazakh Colloquium in Model Theory. Institut Camille Jordan. Lyon.
- Jun 2022 Invariant Measures in ω -categorical Hrushovski constructions. SEEMOD & LYMoTS meeting. University of Manchester.
- Mar 2022 Non-measurability of omega-categorical Hrushovski constructions. European Conference on Interdisciplinary Model Theory - ECIMT. Münster. Talk on Invariant Keisler measures and measurability in Hrushovski constructions.
- Jan 2022 Non-MS-measurability of omega-categorical Hrushovski constructions. British Postgraduate Model Theory Conference (BPGMTC). Manchester & online.
- Dec 2021 Non-MS-measurability of omega-categorical Hrushovski constructions. South and East of England Model Theory Network Conference (SEEMOD). Queen Mary University of London.

Seminars, other Conferences & Visits

- Jul 2024 Computable Structure Theory and Interactions. TU Wien, Vienna.
- Mar 2024 POCOCOP meeting. TU Dresden, Dresden.
- Mar 2024 Two weeks visits at the Korean Institute of Advanced Studies (KIAS). Visiting Javier de la Nuez Gonzales. Funded by the KIAS.
- Nov 2023 POCOCOP meeting. Charles University, Prague.
- Sep 2023 Model Theory and Groups conference in celebration of Katrin Tent's 60th birthday. Münster.
- Sep 2023 CSP World Congress. Weißensee.
- Dec 2022 Model Theory Conference in celebration of Ludomir Newelski's 60th birthday. Będlewo.
- Nov 2022 **One month visit to the Institut Camille Jordan (ICJ)**, Université Claude Bernard, Lyon 1, France. Funded by the ICJ.

- Sep 2022 Warwick-Oxbridge-Manchester-Bristol-London (WOMBL) meeting in additive combinatorics and analytic number theory.
- Jul-Aug 2022 UNIMOD 2022. LMS Research School: Introduction to Model Theory + Workshop: Practical and Structural Model Theory + EMS Summer School: Applications of Model Theory. Presented a poster: **Invariant Keisler Measures in** ω -categorical Hrushovski Constructions. I also contributed by typing the exercises for the problem classes.
 - Jun 2022 Model Theory and Applications. Cetraro. Presented a poster: Invariant Keisler Measures in ω -categorical Hrushovski Constructions.
 - Jun 2022 Mathematics PhD Symposium at Imperial College London: Presented a poster on invariant Keisler measures for a general mathematical audience.
 - Jun 2021 Short Model Theory Huddle (SMTH). Online.
 - Apr 2021 British Postgraduate Model Theory Conference (BPGMTC). Online.
 - Jan 2020 British Postgraduate Model Theory Conference (BPGMTC). Leeds.
 - Dec 2019 South and East of England Model Theory Network Conference (SEEMOD). Imperial College London.

Reading Groups

- 2023-ongoing **Finite Structures with Few Types**, by G. Cherlin and E. Hrushovski. Organiser jointly with Aris Papadopoulos. TU Wien, Leeds, University of Notre Dame, Imperial College London. Presented on §2.1, 2.3, 2.5, 3.3.
- 2023-ongoing **CSP reading group.** Organiser. TU Wien, TU Dresden, Charles University (Prague), Leeds and Cambridge. Website with recordings can be found at: cspreadingroup.github.io. Presented on § 1.1-1.2, 2.6-2.7, 3.5-3.7, 4.6-4.7, 6.1.4-6.1.8, 6.8-6.9
 - 2023-2024 Algebra seminar. TU Wien. Winter term 2023: "Graph Homomorphisms and Universal Algebra" by Manuel Bodirsky. Summer term 2024: Loop conditions. Presented on cyclic terms and the cyclic terms theorem.
 - 2023-2024 Model Theory Seminar. University of Vienna. On Keisler measures in NIP theories.
 - 2023 Reading group on "On $NSOP_2$ theories" by Scott Mutchnik. Organiser. Joint reading group between Imperial and the Institut Camille Jordan. Presented on §2 and §5.
 - 2022-2023 Reading group on "Oligomorphic Permutation Groups" by Peter Cameron. Leeds & online. Presented \S 3.1-3.4, \S 4.5-4.9.
 - 2019-2022 Imperial College Logic Seminar. Presented during the reading group on *Model Theory for Metric Structures* by Itaï Ben Yaacov et al. with talks on: "Connectives and Construction of Models in Continuous Logic" and "The Model Theory of Probability Spaces". Presented during reading group on Simple Theories with talks on the tree property.
- Mar-Apr 2022 Reading Group on "Definability Patterns and their Symmetries" by Ehud Hrushovksi. Online. Charles University, Prague & Imperial College London.
- Jan-Jun 2022 University of East Anglia logic seminar and logic group meetings.

Teaching

2024 **Model theory II: Stability**. TU Wien. Masters' course. Designing and teaching the course, including problem classes (to begin in October 2024).

- 2023-2024 Supervising students at TU Wien:
 - Bachelor thesis on "Automorphism groups and Ramsey properties of sparse graphs" by Evans, Hubička, and Nešetřil.
 - Bachelor mini-thesis project on "The CSP Dichotomy, the Axiom of Choice, and Cyclic Polymorphisms" by Kátay, Tóth, and Vidnyánszky.
 - 2024 **Model theory**. TU Wien. Masters' course. Problem classes and problem sheets, available on my website. Lectured twice.
 - 2022 Associate Fellowship of the Higher Education Academy. Approved through the Imperial College London STAR Framework.
- 2019-2023 **Graduate Teaching Assistant** at Imperial College London: Introduction to University Mathematics (2020, 2022); Linear Algebra and Groups (2019-2022); Latex workshops for first year projects (2020-2022); Mathematics Pre-Arrival Course (2021-2022); Commutative Algebra (2020).
- 2020-2022 Senior Graduate Teaching Assistant: Analysis II (2nd year analysis, metric spaces and topology) (2020-2022).
- 2020-2021 **Personal tutoring.** Grosvenor Tutors. Tutoring students in their final year of high school in mathematics and philosophy.

Awards

- 2023 **Runner-up prize for the Mathematics PhD Symposium poster competition**. Imperial College London.
- 2022 Travel Grant from the Association for Symbolic Logic (ASL) for Unimod 2022.
- 2017 **Gibbs Prize for FHS Mathematics and Philosophy Part A.** Best performance in Mathematics for Mathematics & Philosophy Part A exams.
- 2016 Scholarship, Worcester College. for performance in first year exams.

Postgraduate Courses

- 2019 Infinite Groups. By Dr. Isabel Müller. Imperial College London.
- 2019 Commutative Algebra. By Prof. Alexei Skorobogatov. Imperial College London.
- 2020 Algebraic Geometry. By Prof. Kevin Buzzard. Imperial College London.
- 2020 Lectures on Model Theoretic Tree Properties. By Dr. Nicholas Ramsey. UCLA. Online.
- 2021 Graph Theory. By Dr. Robert Barham. Imperial College London. Online.
- 2021 Graphs Defined on Groups. By Prof. Peter Cameron. LTCC Online Intensive Course.
- 2021 Topics in Pure Model Theory. By Prof. Anand Pillay, Prof. Itay Kaplan & Dr. Gabriel Conant. Fields Instutute. Toronto. Online.
- 2022 Linear Algebraic Groups. By Dr. Adam Thomas. TCC course.

Professional Development Courses

2019-2022 I attended various professional development courses organised by the Graduate School and the Department of Mathematics of Imperial College London including: Maths GTA training, Teaching: Introduction to Assessment and Feedback for Learning, Teaching: Introduction to Learning and Teaching, Teaching: Performative Aspects of Teaching, Teaching: Microteaching, GTA Retreat for Associate Fellowship to the Higher Education Academy, Maximising Your Management Skills: Time Management for your Doctorate.

Other roles

2018-2019 Mathematics & Philosophy representative for MURC (Mathematics Undergraduate Representation Committee) and JCMP (Joint Committee for Mathematics & Philosophy).

Other Interests

- **Piano:** Recently playing: Brahms' Intermezzo Op.118 No.2. and Schumann's Arabeske. Op.18.
- Philosophy: Interested in early analytic philosophy (Frege, Russell, Wittgenstein and Ramsey), philosophy of logic and mathematics, philosophy of quantum physics. Between 2020 and 2021 I participated regularly to meetings of the In Parenthesis reading group (focusing on the work of Anscombe, Murdoch, Foote, Midgley and Diamond).
- **Drawing &** Centro D'arte Martenot, Francesca Del Panta (2011-2020). Life drawing at the Ruskin **Painting:** School of Art (2018).
 - **Origami:** Advanced practitioner and creator. Interested in the links between Mathematics and Origami. Experience teaching origami and mathematics with origami.
 - German: Taking courses at: Goethe-Institut, London (2023), Innes Institute Vienna (2024).

Software & Programming Languages

- Latex (also experience in teaching Latex).
- For mathematics: MatLab; Wolfram Mathematica; Magma.
- Graphics: Adobe Creative Cloud: Illustrator; Photoshop; Indesign. Inkscape.
- Office: Publisher; Excel; Power point; Word.