Alessio Borzì

Curriculum vitae

✉ *alessio.borzi@mis.mpg.de*
🖥 *alessioborzi.github.io*
(Last updated on January 15, 2024)

―――――― Employment

10/07/2023– **Postdoctoral researcher**, *Max-Planck-Institut für Mathematik in den Naturwissenschaften*, Leipzig, Germany.

―――――― Education

30/09/2019–
30/06/2023
PhD in Mathematics, *University of Warwick, Coventry, United Kingdom*.
Advisor: Diane Maclagan

18/12/2020 **Diploma of Scuola Superiore di Catania**, *Scuola Superiore di Catania*, Catania, Italy, *Summa cum laude*.
Advisor: Ivan Martino, Opponent: Alicia Dickenstein

29/07/2019 **Master's degree in Mathematics**, *Università di Catania*, Catania, Italy, *Summa cum laude*.
Advisor: Marco D'Anna

20/07/2017 **Bachelor's degree in Mathematics**, *Università di Catania*, Catania, Italy, *Summa cum laude*.
Advisor: Marco D'Anna

―――――― Publications and Preprints

1. Borzì, A. A characterization of the Arf property for quadratic quotients of the Rees algebra. **J. Algebra Appl. 19**, 7 (2020), 2050127, 14.

2. Borzì, A. Patterns on the numerical duplication by their admissibility degree. In **Numerical semigroups**, vol. 40 of *Springer INdAM Ser.* Springer, Cham, 2020, pp. 9–25.

3. Borzì, A., and D'Alì, A. Graded algebras with cyclotomic Hilbert series. **J. Pure Appl. Algebra** *225*, 12 (2021), Paper No. 106764, 9.

4. Borzì, A., Herrera-Poyatos, A., and Moree, P. Cyclotomic numerical semigroup polynomials with at most two irreducible factors. **Semigroup Forum** *103*, 3 (2021), 812–828.

5. Borzì, A. Weierstrass sets on finite graphs. **Electron. J. Combin.** *29*, 1 (2022), Paper No. 1.4, 13.

6. Borzì, A., Chen, X., Motwani, H. J., Venturello, L., and Vodička, M. The leading coefficient of Lascoux polynomials. **Discrete Math.** *346*, 2 (2023), Paper No. 113217.

7. Borzì, A., and Martino, I. Set of independencies and Tutte polynomial of matroids over a domain. **arXiv preprint** *arXiv:1909.00332* (2019).

8. Borzì, A. Tropical computations for toric intersection theory in Macaulay2. **arXiv preprint** *arXiv:2209.13414* (2022).

9. Borzì, A., and Schleis, V. Linear degenerate tropical flag varieties. **arXiv preprint** *arXiv:2308.04193* (2023).

Awards

21/12/2022   Angelo Marcello Anile Award, *Best master thesis in mathematics and computer science at the University of Catania*

09/2014   Scuola Superiore di Catania fellowship, *Awarded to the top 10 candidate students in a scientific field at the University of Catania*

Selected Talks

25/10/2023   Cyclotomic Numerical Semigroups and Graded Algebras, *(virtually at) University of York*, UK

19/04/2023   Tropical Weierstrass Semigroups, *University of Catania*, Italy

17/06/2022   Cyclotomic Numerical Semigroups and Graded Algebras, *International Meeting on Numerical Semigroups (IMNS)*, Roma, Italy

17/03/2022   Weierstrass sets on finite graphs, *Online Algebraic Geometry Seminar, (virtually at) Nottingham University, UK*

18/11/2021   Birational geometry of blow-ups of $\mathbb{P}^2$, *Oberseminar Geometrie*, Universität Tübingen, Germany

01/11/2021   Tropical moduli spaces and toric embeddings, $\overline{M_{0,n}}$ *seminar*, (virtually at) University of Warwick, United Kingdom

22/04/2021   Graded algebras with cyclotomic Hilbert series, *Graduate student meeting on Applied Algebra and Combinatorics*, (virtually at) Københavns Universitet, Denmark

04/02/2021   Tropical methods in toric intersection theory, *Oberseminar Geometrie*, (virtually at) Universität Tübingen, Germany

20/11/2019   Cyclotomic Numerical Semigroups, *Postgraduate Seminar*, University of Warwick, United Kingdom

17/07/2019   Face poset and Grothendieck-Tutte polynomial of matroids over a domain, *Algebra meets combinatorics in Neuchâtel*, Université de Neuchâtel, Switzerland

25/03/2019   Arf property on quadratic quotients of the Rees algebra, *Problem solving seminar*, Stockholm University, Sweden

04/09/2018   A characterization of the Arf property for quadratic quotients of the Rees algebra, *International Meeting on Numerical Semigroups (IMNS)*, Cortona, Italy

Conferences

13-15/11/2023	[Workshop on Geometry and Machine Learning](#), MPI MiS Leipzig, Germany
08-10/11/2023	[IMPRS Combo 1](#), MPI MiS Leipzig, Germany
16-18/10/2023	[Chow Lectures](#), MPI MiS Leipzig, Germany
03-07/07/2023	[GAeL XXX](#), University of Warwick, UK
12-16/06/2023	[PRAGMATIC 2023](#), University of Catania, Italy
27/06-01/07/2022	[Arrangements in Ticino](#), Locarno and Lugano, Switzerland
13-17/06/2022	[International meeting on numerical semigroups (IMNS) 2022](#), Rome, Italy
30/05-01/06/2022	[Göran Gustafsson lectures in mathematics 2022](#), Institute Mittag-Leffler, Sweden
23-27/05/2022	[Géométrie Algébrique en Liberté XXIX (GAeL)](#), Université Paris-Saclay, France
04-05/05/2022	[Tropical Mathematics & its Applications](#), Durham University, UK
28/02-04/03/2022	[OSCAR developer meeting - Tropical Geometry](#), TU Kaiserslautern, Germany
03/12/2021	[Applied Algebra and Geometry Research Network](#), Online Conference
24–30/10/2021	[Tropical Curves, Logarithmic Structures, and Enumerative Geometry](#), Oberwolfach, Germany
26/07–06/08/2021	[Combinatorial Algebraic Geometry](#), Online conference
28/06–02/07/2021	[Tropical Moduli Spaces](#), Online conference
21–23/04/2021	[Graduate student meeting on Applied Algebra and Combinatorics](#), Online conference
19/03/2021	[Birational Geometry and Thereabouts](#), Online conference
15/02–05/03/2021	[Research Encounters in Algebraic and Combinatorial Topics](#) (REACT), Online conference
08/06–24/07/2020	[Algebraic and Tropical Online Meetings](#) (ATOM), Online conference
01–05/06/2020	[Warwick Macaulay 2 Workshop](#), ~~University of Warwick, United Kingdom~~ Online conference
06/12/2019	[Tropical Differential Algebra Workshop](#), Queen Mary University of London, United Kingdom
02–04/12/2019	[Einstein Workshop on Polytopes and Algebraic Geometry](#), Freie Universität Berlin, Germany
15–17/07/2019	[Algebra meets combinatorics in Neuchâtel](#), Université de Neuchâtel, Switzerland
03–07/09/2018	[International Meeting on Numerical Semigroups](#) (IMNS), Cortona, Italy
31/05–04/06/2021	[Encounter in Topology and Algebra](#) (ET'nA), Scuola Superiore di Catania, Italy

Teaching

Winter 2022	**Teaching assistant**, for the course MA453 Lie Algebras. Taught by Andrew Macpherson, *University of Warwick*
Fall 2021	**Teaching assistant**, for the course MA131 Analysis I. Taught by Daniel Ueltschi, *University of Warwick*
Winter 2021	**Teaching assistant**, for the course MA377 Rings and Modules. Taught by Samir Siksek, *University of Warwick*
Fall 2020	**Teaching assistant**, for the course MA4L7 Algebraic Curves. Taught by Diane Maclagan, *University of Warwick*

Research visits

29/10–28/11/2021	Research period at the Universität Tübingen (Germany) in the combinatorial algebraic geometry group, under the supervision of Hannah Markwig.
07/03–05/06/2019	Research period at the KTH Royal Institute of Technology (Sweden) in the combinatorics group, under the supervision of Ivan Martino.

Other professional activities

Member of the Associazione Alumni Scuola Superiore di Catania.

Member of the London Mathematical Society (LMS).

Member of the GNSAGA

Referee for: European Journal of Combinatorics, Journal of Commutative Algebra, Australasian Journal of Combinatorics.

Outreach

02-03/10/2021	Speaker at the Simposio Matematico RIMSE 2021.
19–22/04/2018	**Organizer** for the Training Course for Mathematical Olympiad (fourth edition) at the Scuola Superiore di Catania.
20–23/04/2017	**Organizer** for the Training Course for Mathematical Olympiad (third edition) at the Scuola Superiore di Catania.
22–24/04/2016	**Lecturer** for the Training Course for Mathematical Olympiad (second edition) at the Scuola Superiore di Catania.