

# Massimiliano Alessandro

## Curriculum Vitae

Fachrichtung Mathematik  
Campus, Gebäude E2 4  
Universität des Saarlandes  
66123 Saarbrücken  
Germany

✉ [malessandro@math.uni-sb.de](mailto:malessandro@math.uni-sb.de)  
🌐 [massimiliano-alessandro.github.io](https://github.com/massimiliano-alessandro)  
Last update: October 2024

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### Personal Data

FIRST NAME: Massimiliano  
FAMILY NAME: Alessandro  
NATIONALITY: Italian

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### Current Position

I am currently a **Postdoc (wissenschaftlicher Mitarbeiter)** at *Universität des Saarlandes, Fakultät für Mathematik und Informatik, Fachrichtung Mathematik*, Saarbrücken, Germany.  
Postdoc supervisor: Prof. Dr. Vladimir Lazić.

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### Diplomas

- 2023 **Ph.D. in Mathematics (joint doctoral program)**,  
Thesis title: *Constructions and moduli of surfaces of general type and related topics.*  
*Università degli Studi di Genova*, Genoa, Italy.  
*Dottorato di Ricerca in Matematica e Applicazioni (XXXV ciclo).*  
Title awarded: Dottore di Ricerca (Dott. Ric.).  
Supervisor: Prof. Dr. Matteo Penegini.  
*Universität Bayreuth*, Bayreuth, Germany.  
*Promotion an der Fakultät für Mathematik, Physik und Informatik.*  
Title awarded: Doktor der Naturwissenschaften (Dr. rer. nat.).  
Final grade: magna cum laude.  
Supervisor: Prof. Dr. Ingrid Bauer.  
Award date: 25/10/2023
- 2019 **Laurea Magistrale in Matematica (Master of Science)**,  
*Università degli Studi di Catania*, Catania, Italy.  
Final grade: 110/110 cum laude.  
Thesis title: *Razionalità e irrazionalità di ipersuperfici algebriche.*  
Supervisor: Prof. Dr. Francesco Russo.  
Award date: 30/09/2019
- 2017 **Laurea in Matematica (Bachelor of Science)**,  
*Università degli Studi di Catania*, Catania, Italy.  
Final grade: 110/110 cum laude.  
Thesis title: *Superfici a curvatura gaussiana nulla.*  
Supervisor: Prof. Dr. Francesco Russo  
Award date: 17/11/2017
- 2013 **High School Diploma**,  
*Liceo Scientifico Statale "E. Fermi"*, Ragusa, Italy.  
State exam at the end of the course of studies in: *Liceo Scientifico Piano Nazionale Informatica (PNI) - Corso Sperimentale Matematica e Fisica con elementi di Informatica.*  
Final grade: 100/100 cum laude.  
Award date: 08/07/2013

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## Education

- 2019-2023 **Ph.D. in Mathematics (joint doctoral program)**, *Università degli Studi di Genova*, Italy, and *Universität Bayreuth*, Germany.  
Supervisors: Prof. Dr. Matteo Penegini (Genoa) and Prof. Dr. Ingrid Bauer (Bayreuth).
- 2017-2019 **Master Studies in Mathematics**, *Università degli Studi di Catania*, Catania, Italy.
- 2014-2017 **Bachelor Studies in Mathematics**, *Università degli Studi di Catania*, Catania, Italy.
- 10/2012 **English Language School**, "Churchill House School", Ramsgate, UK, Certificate Awarded: First Certificate in English (FCE), Level B2.
- 2008-2013 **Scientific High School**, *Liceo Scientifico Statale "E. Fermi"*, Ragusa, Italy.

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## Affiliations and Fellowships

- 2024- – **Member of the INdAM-GNSAGA Research Group.**
- 2020-2023 **Member of the PRIN 2020 "Curves, Ricci flat Varieties and their Interactions"**, *Ministero dell'Istruzione, dell'Università e della Ricerca*, 2020KKWT53-003, Principal Investigator: G. Mongardi.
- 2019-2023 **Ph.D. Fellowship "Borsa di Dottorato"**, *Università degli Studi di Genova*.  
11/2019-03/2023

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## Research Visits

- 2021-2023 **Universität Bayreuth**, under the supervision of Prof. Dr. Ingrid Bauer, Bayreuth, Germany.  
10/2021-02/2023

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## Research Fields

Complex algebraic geometry and related topics:

- Construction and classification of complex algebraic surfaces: in particular, surfaces of general type and their moduli space.
- Projective representations.

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## Publications

2. ALESSANDRO, MASSIMILIANO AND CATANESE, FABRIZIO: *On the components of the Main Stream of the moduli space of surfaces of general type with  $p_g = q = 2$* , to appear in "Perspectives on four decades: Algebraic Geometry 1980-2020. In memory of Alberto Collino". Trends in Mathematics, Birkhäuser (arXiv:2212.14872v3).
1. ALESSANDRO, MASSIMILIANO AND GLEISSNER, CHRISTIAN AND KOTONSKI, JULIA: *Semi-Projective Representations and Twisted Schur Multipliers*, Communications in Algebra, vol. 51, no. 10, 4471–4480, DOI: 10.1080/00927872.2023.2211175 (2023).

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## Papers in Preparation

- ALESSANDRO, MASSIMILIANO AND FRAPPORTI, DAVIDE AND GLEISSNER, CHRISTIAN: *On mixed surfaces*.

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## Conference Talks

- 24/07/2024 **"AC3 surfaces: a new family of surfaces of general type with  $p_g = q = 2$ "**.  
Arithmetic and Geometry of Low-Dimensional Algebraic Varieties (Joint Meeting AMS-UMI 2024), *Università degli Studi di Palermo*, Palermo, Italy.  
23/07/2024-24/07/2024

- 13/06/2024 **"AC3 surfaces: a new construction method for surfaces of general type with  $p_g = q = 2$ ".** II meeting UMI for Doctoral Students, Università degli Studi di Napoli, Italy, 13-14 June 2024, *Università degli Studi di Napoli, Dipartimento di Matematica*, Naples, Italy.  
13/06/2024-14/06/2024
- 06/02/2024 **"Semi-projective representations and diffeomorphisms of complex torus quotients".** Genova - Torino - Milano Seminar: some topics in commutative algebra and algebraic geometry, *Università degli Studi di Milano, Dipartimento di Matematica*, Milan, Italy.  
05/02/2024-06/02/2024
- 05/07/2023 **"CHPP surfaces: a new construction method for surfaces of general type with  $p_g = q = 2$ ".** Géométrie Algébrique en Liberté (GAeL) XXX, *University of Warwick, Mathematics Institute*, Coventry, UK.  
03/07/2023-07/07/2023

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## Invited Talks

- 14/12/2023 **"On the classification of surfaces of general type with  $p_g = q = 2$ ".** Seminario di Geometria Algebrica ed Algebra Commutativa, *Politecnico di Milano, Dipartimento di Matematica*, Milan, Italy.
- 07/11/2023 **"On the classification of surfaces of general type with  $p_g = q = 2$ ".** Seminari di Algebra e Geometria Algebrica, *Politecnico di Torino, DISMA Dipartimento di Scienze Matematiche*, Turin, Italy.
- 05/06/2023 **"On the construction of certain surfaces of general type".** Seminario di Ricerca di Geometria e Algebra, *Università degli Studi di Catania, DMI Dipartimento di Matematica e Informatica*, Catania, Italy.
- 16/03/2023 **"Equations of families of complex algebraic surfaces with  $p_g = q = 2$ ".** Doc in Progress, *Università degli Studi di Trento, Dipartimento di Matematica*, Trento, Italy.

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## Research Seminars

- 16/07/2024 **"On the Classification of Surfaces of General Type with  $p_g = q = 2$ ".** Oberseminar Algebraische Geometrie, *Universität des Saarlandes, Saarbrücken*, Germany.
- 08/03/2023 **"On a new construction method for surfaces of general type with  $p_g = q = 2$ ".** Algebra & Geometry Research Seminar, *Università degli Studi di Genova, DIMA Dipartimento di Matematica*, Genoa, Italy.
- 06/2022 **"On some surfaces of general type with Albanese map of degree 3".** Oberseminar Algebraische Geometrie - Lehrstuhl Mathematik VIII, *Universität Bayreuth*, Bayreuth, Germany.
- 11/2021 **"Triple covers of abelian surfaces".** Oberseminar Algebraische Geometrie - Lehrstuhl Mathematik VIII, *Universität Bayreuth*, Bayreuth, Germany.

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## Reading Seminars

- 2019-2021 **"On the Minimal Model Program".** Geometry Seminar, *Università degli Studi di Genova, DIMA Dipartimento di Matematica*, Genoa, Italy (**2 Talks**).
- SS 2022 **"On the classification of algebraic surfaces".** Seminar for graduate students, *Universität Bayreuth*, Bayreuth, Germany (**2 Talks**).

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## Undergraduate Seminars

- WS 2021/22 **"Bieberbach groups and flat manifolds".** Seminar for undergraduate students, *Universität Bayreuth*, Bayreuth, Germany (**1 Talk**).

30/11/2017 **"Superfici a curvatura gaussiana nulla"**. Talk for undergraduate students, *Università degli Studi di Catania*, Catania, Italy.

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## Teaching

- WS 2022/23 **Assistant for exercise classes of the course "Complex Varieties" (Lecturer: Dr. Christian Gleissner)**, *Universität Bayreuth*, Bayreuth, Germany. Topics: *Complex Manifolds, Riemann Surfaces, Differential Forms, Line Bundles, Cohomology*.
- 2020-2021 **Tutor for the undergraduate courses "Algebra Lineare & Geometria Analitica (ALGA)", "Algebra 1" and "Analisi Matematica 1"**, *Università degli Studi di Genova, DIMA Dipartimento di Matematica*, Genoa, Italy.  
Academic Year: 2020-2021

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## Awards and Prizes

- 2016-2017 **Premi incentivanti per studenti iscritti al corso di laurea in Matematica L-35**, *Università degli Studi di Catania*, Catania, Italy.  
Academic Year: 2016-2017
- 2015-2016 **Premi incentivanti per studenti iscritti al corso di laurea in Matematica L-35**, *Università degli Studi di Catania*, Catania, Italy.  
Academic Year: 2015-2016
- 2014-2015 **Premi incentivanti per studenti iscritti al corso di laurea in Matematica L-35**, *Università degli Studi di Catania*, Catania, Italy.  
Academic Year: 2014-2015
- 2012 **Certamen Latinum Mutycense (Editio II)**, *I.I.S. "Galilei-Campailla" (Sez. Classico)*, Modica, Italy, rewarded with Honourable Mention.
- 2011 **Certamen Latinum Aetnaeum (Editio VII)**, *Liceo Scientifico Statale "G. Galilei"*, Catania, Italy, rewarded with Honourable Mention.
- 2008 **Giochi Matematici di Sicilia AICM (Edition XII)**, *Mathematical Olympiads organized by AICM*, Enna, Italy, fourth place.
- 2008 **Premio Letterario "Nicholas Green"**, Ragusa, Italy, winner.

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## Spoken Languages

- Italian: Mother tongue.  
English: Advanced (C1).  
German: Beginner (A2).  
French: Beginner (A1).

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## Computer Skills

- C, Python, Singular: Competent  
MS Office: Proficient  
MAGMA,  $\LaTeX$ : Expert

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## Further Information

- 2012 **First Certificate in English (FCE)**, *University of Cambridge, ESOL Examinations*, Ramsgate, UK, Level B2.  
Award date: October 2012
- 2010 **European Computer Driving Licence (ECDL)**, Ragusa, Italy.