

# Matteo Bonini

## Curriculum Vitae

Department of Mathematical Sciences  
Aalborg University  
Aalborg, Denmark  
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☎ (+45) 91655688  
✉ mabo@math.aau.dk

### Generalities

Born in Perugia, Italy. Italian citizen. Married.

### Research Interests

Coding theory, algebra, geometry, cryptography.

### Appointments

- 01/09/2025–today **Associate Professor**, *Aalborg University*, Aalborg
- 01/09/2025–today **Orient's Fond Chair Associate Professor**, *Aalborg University*, Aalborg
- 15/01/2022–31/08/2025 **Assistant Professor**, *Aalborg University*, Aalborg
- 01/10/2020–14/01/2022 **IRC Postdoctoral Fellow**, *University College Dublin*, Dublin, Academic mentor: Eimear Byrne
- 01/01/2020–30/09/2020 **Postdoctoral Fellow**, *Università degli Studi di Trento*, Trento, Research title: "Algebraic and algebraic-geometric aspects of cryptographic primitives used in blockchain technology". Head of research: Prof. Massimiliano Sala
- 11/2015–02/2019 **Doctoral Fellow**, *Università degli Studi di Trento*, Trento  
Advisors: Prof. Massimiliano Sala, Doct. Giancarlo Rinaldo.

### Education

- 2015–2019 **Ph.D. in Mathematics**, *Università degli Studi di Trento*, Trento, *Awarded Cum Laude*  
Thesis title: "Intersections of Algebraic Curves and their link to the weight enumerators of Algebraic-Geometric Codes". Advisors: Prof. Massimiliano Sala, Doct. Giancarlo Rinaldo.
- 2012–2015 **Master degree in Mathematics**, *Università degli Studi di Perugia*, Perugia, *110/110 Cum Laude*  
Thesis title: "Linear Network Codes and Algebraic Curves". Advisor: Prof. Massimo Giulietti.
- 2009–2012 **Bachelor degree in Mathematics**, *Università degli Studi di Perugia*, Perugia, *106/110*  
Thesis title: "Teoria Algoritmica dei Numeri e Crittografia". Advisor: Prof. Giorgio Faina.

### Qualifications

- 11/2024 Italian qualification for the Associate professor position in the section *Settore 01/A2 - Geometria e Algebra*.
- 06/02/2020 French qualification for the Maître de conférences position in the section 26 - *Mathématiques appliquées et applications des mathématiques* (qualification n. 20226344710).
- 21/01/2020 French qualification for the Maître de conférences position in the section 25 - *Mathématiques* (qualification n. 20225344710).

## Teaching

*Notation:* S = Spring semester, F = Fall semester

**Mathematical foundations of computer science.** Lecturer, Aalborg University (S25, S26).

**Algebra 1.** Lecturer, Aalborg University (F22, S23, S24, S26).

**Algebra 2.** Lecturer, Aalborg University (S22, S23, F23, F24, F25).

**Linear algebra and its applications 2.** Lecturer, Aalborg University (F22).

**Cryptography.** Lecturer, Aalborg University (S25).

**Applications of algebraic structures.** Project supervisor, Aalborg University (S23, S24, S26). Supervision of 4th-semester projects.

**Discrete mathematics.** Project supervisor, Aalborg University (F23, F24, S25). Supervision of 1st-semester projects in F23 and F24, and of 4th-semester projects in S25.

**Application-oriented mathematics.** Project supervisor, Aalborg University (S22, S24). Supervision of 8th-semester projects.

**Introductory application-oriented mathematics.** Project supervisor, Aalborg University (F22, F23, F25). Supervision of 7th-semester projects.

**Advanced application-oriented mathematics.** Project supervisor, Aalborg University (F22, F23). Supervision of 9th-semester projects.

**Differential equations.** Project supervisor, Aalborg University (F25). Supervision of 3rd-semester projects.

**Dynamic systems.** Project supervisor, Aalborg University (F23). Supervision of 3rd-semester projects.

**Discrete optimization.** Project supervisor, Aalborg University (F25). Supervision of 1st-semester projects.

**Introduction to project work.** Project supervisor, Aalborg University (F25). Supervision of 1st-semester projects.

**Simmetries.** Project supervisor, Aalborg University (S22). Supervision of 4th-semester projects.

**Bachelor Project.** Project supervisor, Aalborg University (S22, S23, S26). Supervision of 6th-semester projects in Mathematics.

**Master Project.** Project supervisor, Aalborg University (F22, S24, F24). Supervision of 10th-semester projects in Mathematics, and in S24 also in Mathematical Engineering.

**Mathematical Kaleidoscope III.** Lecturer for the Ph.D. course module “Error correcting codes and their cryptographic applications” (January 2026).

**Advances in Cryptography and Codes: Advanced algebraic and geometric methods for the construction of minimal codes.** Lecturer, University of Trento, Ph.D. course (April–May 2023).

**Cloud encryption: cifrature omomorfe e attacchi crittoanalitici.** Lecturer, Rome (14–18 September 2020).

**Geometria e Algebra Lineare.** Teaching Assistant, Politecnico di Milano (F19).

**Geometria A.** Teaching Assistant, Università degli Studi di Trento (S18, F18).

**Coding Theory and Applications.** Teaching Assistant, Università degli Studi di Trento (F16, F17).

**Post-quantum Cryptography.** Code-based Cryptography Lecturer, Università degli Studi di Trento (March 2017).

**Advanced analysis of block chipers.** Laboratory assistant, Università degli Studi di Trento (October 2016).

**Bitcoin, Blockchain and their new frontiers.** Elliptic Curves Lecturer, Università degli Studi di Trento (May 2016).

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## Other Teaching-Related Activities

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|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14/10/2019–<br>13/11/2019 | Teaching collaboration. Purpose: Organization of a series of meetings between companies and students of the Master of Science in Mathematics on the topic of internships and job opportunities. University of Trento, Trento (Italy). |
| 15/11/2021–<br>15/12/2021 | Teaching collaboration. Purpose: Organization of course for professionals on the applications of coding theory to cryptography. University of Trento, Trento (Italy).                                                                 |

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## Research Projects and collaborations

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|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 07/2019–12/2019           | Research Collaboration, Department of Mathematics, Blockchain technology, with focus on privacy and traceability of cryptocurrencies. University of Trento, Trento (Italy).                                                                                                                                                                                                                                                                                                                      |
| 01/01/2020–<br>30/09/2020 | Distributed Ledgers for secure open communities (SecureOpenNets) PON 2014-2020 Ricerca ed Innovazione. European project Partnership: Alkemy Tech srl, Poste Italiane SpA, OKT Srl, BV Tech SpA, Consiglio Nazionale delle Ricerche, SUBCOM srl, University of Trento, University of Calabria, Mediterranean University of Reggio Calabria. Purpose: design of cryptographically secure blockchain-based protocols for secure management of sensitive data, with focus on the compliance to GDPR. |

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## Scientific Production

- [20] M. Bonini, J. V. Dinesen. *Almost Affine Vector Rank-Metric Codes*, submitted (arXiv:2605.28072).
- [19] M. Bonini, E. Byrne, G. Cotardo. *Constructions of Rank-Metric Codes of Small Tensor Rank*, submitted (arXiv:2605.21784).
- [18] M. Bonini, A. Dionigi, F. Ghiandoni. *Quasy-cyclic and geneneralized quasi-cyclic AG codes*, submitted (arXiv:2602.05097).
- [17] M. Bonini, M. Borello, E. Byrne. *The geometry of covering codes in the sum-rank metric*, Designs, Codes, and Cryptography, 93, 2993–3009 (2025). (<https://doi.org/10.1007/s10623-025-01628-6>).
- [16] D. Bartoli, M. Bonini. *More on the DLW conjectures*, Finite Fields and Their Applications, 93, 102332 (2024). (<https://doi.org/10.1016/j.ffa.2023.102332>).
- [15] D. Bartoli, M. Bonini, M. Timpanella. *Minimal codewords in Norm-Trace codes*, Aequationes Mathematicae 98, 333–346 (2024). (<https://doi.org/10.1007/s00010-023-00985-8>).
- [14] M. Bonini, M. Borello, E. Byrne. *Saturating systems and the rank covering radius*, Journal of Algebraic Combinatorics 58, 1173–1202 (2023). (<https://doi.org/10.1007/s10801-023-01269-9>).
- [13] M. Bonini, M. Sala, L. Vicino. *Rational points on cubic surfaces and AG codes from the Norm-Trace curve*, Annali di Matematica Pura e Applicata, 202, 185–208 (2023). (<https://doi.org/10.1007/s10231-022-01237-3>).
- [12] D. Bartoli, M. Bonini, *A short note on polynomials  $f(X) = X + AX^{q^2(q-1)/4} + BX^{3q^2(q-1)/4} \in \mathbb{F}_{q^2}[X]$ ,  $q$  even*, Journal of Algebra and its Applications, 22 (7), 2350144 (2023). (<https://doi.org/10.1142/S021949882350144X>).
- [11] M. Bonini, S. Lia, M. Timpanella. *Minimal linear codes from Hermitian and quadric varieties*, Applicable Algebra in Engineering, Communication and Computing, 34, 201–210 (2023) (<https://doi.org/10.1007/s00200-021-00500-z>).
- [10] D. Bartoli, M. Bonini, B. Güneş. *An inductive construction of minimal codes*, Cryptography and Communications, 13, 439–449 (2021) (<https://doi.org/10.1007/s12095-021-00474-2>).
- [9] D. Bartoli, M. Bonini, M. Timpanella. *On the weight distribution of some minimal codes*, Designs, Codes and Cryptography, 89, 471–487 (2021). (<https://doi.org/10.1007/s10623-020-00826-8>).
- [8] E. Ballico, M. Bonini. *On the weights of dual codes arising from the GK curve*, Applicable Algebra in Engineering, Communication and Computing, 34, 67–79 (2023). (<https://doi.org/10.1007/s00200-020-00480-6>).
- [7] D. Bartoli, M. Bonini. *Planar Polynomials arising from linearized polynomials*, Journal of Algebra and its Applications, 21(1), 2250002 (2022) (<https://doi.org/10.1142/S0219498822500025>).
- [6] M. Bonini, M. Borello. *Minimal linear codes arising from blocking sets*, Journal of Algebraic Combinatorics, 253, 327–341 (2021) (<https://doi.org/10.1007/s10801-019-00930-6>).

- [5] M. Bonini, M. Sala. *Intersections between the norm-trace curve and some low degree curves*, Finite Fields and Their Applications 67, 101715 (2020) (<https://doi.org/10.1016/j.ffa.2020.101715>).
- [4] M. Bonini, M. Montanucci, G. Zini. *On plane curves given by separated polynomials and their automorphisms*, Advances in Geometry, 20(1), 61–70 (2020) (<https://doi.org/10.1515/advgeom-2019-0005>).
- [3] D. Bartoli, M. Bonini. *Minimal linear codes in odd characteristic*, IEEE Transactions on Information Theory, 65(7), 4152–4155 (2019). (doi:10.1109/TIT.2019.2891992)
- [2] D. Bartoli, M. Bonini. *Minimum weight codewords in dual Algebraic-Geometric codes from the Giulietti-Korchmáros curve*, Designs, Codes and Cryptography, 87(6), 1433–1445 (2019). (<https://doi.org/10.1007/s10623-018-0541-y>)
- [1] D. Bartoli, M. Bonini, M. Giulietti. *Constant dimension codes from Riemann-Roch spaces*, Advances in Mathematics of Communications 11(4), 705–713 (2017). (doi:10.3934/amc.2017051)

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## Informative papers

- [1] M. Bonini. *Un modello di Blockchain per la tracciabilità dei prodotti alimentari, basata su Ethereum. Ethereum blockchain model for food products traceability*, Sanità pubblica veterinaria 113 (2019).

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## Talks

\* means invited talk

- 25/05/2026 *Tensor Rank of Matrix Codes from Products of AG Codes*, Combinatorics 2026, Napoli (Italy).
- 05/02/2026 *On the Tensor Rank of Rank-Metric Codes*, Special Applied Algebra Days, University of South Florida, Tampa, Florida (USA). \*
- 08/07/2025 *On the Tensor Rank Defect of Rank-Metric Codes*, SIAM Conference on Applied Algebraic Geometry (AG25), Madison, Wisconsin (USA). \*
- 23/06/2025 *Tensor Rank of Rank-Metric Codes*, 1st Dublin Discrete Mathematics Workshop, Dublin (Ireland). \*
- 25/07/2024 *Introductory talk for the session “Algebraic Coding Theory”*, 2nd AMS-UMI International Joint Meeting, Palermo (Italy).
- 18/06/2024 *The geometry of covering codes in the sum-rank metric*, WCC 2024: The Thirteenth International Workshop on Coding and Cryptography, Perugia (Italy).
- 07/06/2024 *Minimal codewords in norm-trace codes*, Combinatorics 2024, Carovigno (Italy).
- 09/01/2024 *Intersections of algebraic varieties in coding theory*, University of South Florida (USA). \*
- 12/07/2023 *Saturating systems in the rank metric*, SIAM Conference on Applied Algebraic Geometry (AG23), Eindhoven (Netherlands). \*

- 05/07/2023 *Covering codes in the rank metric & saturating systems*, 29th Nordic Congress of Mathematicians with EMS, Aalborg (Denmark).
- 21/06/2023 *Saturating systems and covering radius in the (sum-)rank metric*, Fq15 "The 15th International Conference on Finite Fields and their Applications", Paris (France).
- 03/06/2022 *Saturating systems in the rank metric*, Combinatorics 2022, Mantova (Italy).
- 02/12/2021 *Intersection of the algebraic curves and their application to coding theory*, Discrete Mathematics, Codes and Cryptography Seminar, LAGA, University Paris 8, Paris (France). \*
- 14/11/2021 *Intersection of algebraic varieties over finite fields and their application to coding theory*, Seminar of the Mathematical Sciences Department, University of Aalborg, Aalborg (Denmark). \*
- 18/02/2021 *Intersection of algebraic varieties over finite fields and their application to coding theory*, UCD Algebra and Number Theory Seminar, University College Dublin, Dublin (Ireland). \*
- 27/11/2019 *Analysis on the de-anonymisation of blockchains*, Seminario De Cifris-Athesis, Università degli Studi di Trento, Trento (Italy). \*
- 12/07/2019 *On the weight distribution of dual AG codes from the GK curve*, SIAM Conference on Applied Algebraic Geometry (AG19), Bern (Switzerland). \*
- 01/04/2019 *Intersections between the norm-trace curve and some low degree curves*, WCC2019, The Eleventh International Workshop on Coding and Cryptography, Saint-Jacut-de-la-Mer (France).
- 28/03/2019 *Minimal linear codes in odd characteristic*, Séminaire Mathématiques Discrètes, Codes et Cryptographie, LAGA, University Paris 8, Paris (France). \*
- 04/06/2018 *Intersections between the Norm-Trace curve and some conics*, Combinatorics 2018, Arco (Italy).
- 11/05/2018 *Supersingular isogeny key exchange*, Università degli Studi di Perugia, Perugia (Italy). \*
- 09/11/2017 *Affine Variety Codes*, Università degli Studi di Perugia, Perugia (Italy). \*
- 05/06/2017 *Minimal weight codewords of some codes from the GK curve*, Fq13 "The 13th International Conference on Finite Fields and their Applications", Gaeta (Italy).
- 05/04/2017 *Introduction to Post-Quantum Cryptography*, Università degli Studi di Perugia, Perugia (Italy). \*
- 09/03/2017 *Order domain codes*, Università degli Studi di Perugia, Perugia (Italy). \*
- 16/06/2016 *Solving the key equation of alternant codes with Groebner bases*, Trento (Italy).
- 13/05/2016 *Chunk 14: Elliptic Curves*, Bitcoin, Blockchain and their new frontiers, University of Trento, Trento (Italy). \*
- 17/12/2015 *Random network codes and algebraic curves*, Workshop BunnyTN 6, Trento (Italy). \*

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## Conferences and workshops

- 25-29/05/2026 Combinatorics 2026, Napoli (Italy).
- 04-07/02/2026 Special Applied Algebra Days, University of South Florida, Tampa, Florida (USA).
- 07-11/07/2025 SIAM Conference on Applied Algebraic Geometry (AG25), Madison, Wisconsin (USA).
- 23-27/06/2025 1st Dublin Discrete Mathematics Workshop, Dublin (Ireland).
- 23-26/07/2024 2nd AMS-UMI International Joint Meeting, Palermo (Italy).
- 17-21/06/2024 WCC 2024: The Thirteenth International Workshop on Coding and Cryptography, Perugia (Italy).
- 3-7/06/2024 Combinatorics 2024, Carovigno (Italy).
- 10-14/07/2023 SIAM Conference on Applied Algebraic Geometry (AG23), Eindhoven (Netherlands).
- 03-07/07/2023 *Covering codes in the rank metric & saturating systems*, 29th Nordic Congress of Mathematicians with EMS, Aalborg (Denmark).
- 19-23/06/2023 *Saturating systems and covering radius in the (sum-)rank metric*, Fq15 "The 13th International Conference on Finite Fields and their Applications", Paris (France).
- 30/05/2022 - Combinatorics 2022, Mantova (Italy).  
03/06/2022
- 21-22/09/2021 First UMI's Conference of Coding Theory and Cryptography, in memory of Michele Elia, University of L'Aquila (online event).
- 20-24/09/2021 II Workshop on Finite Fields and Applications, in memory of Fernando Torres, University of Brasilia (online event).
- 12-16/07/2021 CDC, Combinatorial Designs and Codes, satellite event of the 8th European Congress of Mathematics (online event).
- 05-09/07/2021 BCC 2021, 28th British Combinatorial Conference, delivered online from Durham University.
- 07-11/06/2021 Algebraic Coding Theory e-Summer School - ACT21, University of Zurich (online event)
- 28-29/05/2021 CrypTO Conference 2021, Politecnico di Torino (online event).
- 08-12/03/2021 International Workshop on Cryptography and Coding Theory IWCC 2021, online event.
- 06-08/07/2020 International Workshop on the Arithmetic of Finite Fields WAIFI 2020, Rennes (France).
- 16/11/2019 La De Cifris incontra Perugia, Università degli Studi di Perugia, Perugia (Italy).
- 09-13/07/2019 SIAM AG19, SIAM Conference on Applied Algebraic Geometry, Bern (Switzerland).
- 31/03/2019 - WCC2019, The Eleventh International Workshop on Coding and Cryptography  
05/04/2019 2019, Saint-Jacut-de-la-Mer (France).
- 03/10/2018 La De Cifris incontra Roma, Università degli Studi Roma Tre, Roma (Italy).

- 21/09/2018 GK70, Università degli Studi della Basilicata, Potenza (Italy).
- 03-09/06/2018 Combinatorics 2018, Arco, Trento (Italy).
- 18-22/09/2017 WCC2017, The Tenth International Workshop on Coding and Cryptography 2017, Saint Petersburg (Russia).
- 04-10/06/2017 Fq13, The 13th International Conference on Finite Fields and their Applications, Gaeta (Italy), 4-10 June 2017.
- 13-17/03/2017 Post-quantum Cryptography, Università degli Studi di Trento, Trento (Italy).
- 16/11/2016 Workshop BunnyTN7, Università degli Studi di Trento, Trento (Italy).
- 10/11/2016 Blockchain and Innovative Applications, Università degli Studi di Trento, Trento (Italy).
- 28/10/2016 Cryptographic Aspects of Cloud and Distributed Computing, Università degli Studi di Trento, Trento (Italy).
- 17 -21/10/2016 Advanced Analysis of Block Ciphers, Università degli Studi di Trento, Trento (Italy).
- 24/09/2016 Giornata di Geometrie di Galois, Università degli Studi di Perugia, Perugia (Italy).
- 13-15/07/2016 International Workshop on the Arithmetic of Finite Fields WAIFI 2016, University of Ghent, Ghent (Belgium).
- 12-13/05/2016 Bitcoin, Blockchain and their new frontiers, Università degli Studi di Trento, Trento (Italy).
- 17/12/2015 Smartphone: cifrature e sicurezza, Università degli Studi di Trento, Trento (Italy).
- 17/12/2015 Workshop BunnyTN 6, Università degli Studi di Trento, Trento (Italy).

## Awards and Grants

- Orient's Fond Co-PI concerning secure and reliable communication in the maritime sector, 2024, 10 millions DKK.
- Irish Research Council Ulysses 2020 award for the research proposal "Geometric Constructions of Codes for Secret Sharing", June 2021, 4980€.
- Irish Research Council Government Postdoctoral Fellowship for the research proposal GOIPD/2020/597 "Algebraic Geometry Codes for Error-Correction in Distributed and Quantum Systems", August 2020, 95937.93€.
- INDAM – Istituto Nazionale di Alta Matematica Travel award for the participation to SIAM AG19.
- SIAM – Society for Industrial and Applied Mathematics Early career travel award in connection with the SIAM AG19 conference on Applied Algebraic Geometry

## Research Stays



January 2024 University of South Florida (USA).  
 May 2023 University of Trento, Trento (Italy).  
 July 2022 University College Dublin, Dublin (Ireland).  
 December 2021 Université Paris 8, Paris (France).  
 November 2021 University of Aalborg, Aalborg (Denmark).  
 November 2019 University College Dublin, Dublin (Ireland).  
 March 2019 Université Paris 8, Paris (France).

## Reviewing

Reviewer for the international journals:

- *Transactions of the American Mathematical Society*,
- *IEEE Transactions on Information Theory*,
- *Finite Fields and their Applications*,
- *SIAM Journal on Applied Algebra and Geometry*,
- *Discrete Mathematics*,
- *Designs, Codes, and Cryptography*,
- *Linear Algebra and its Applications*,
- *Journal of Symbolic Computations*,
- *Journal of Algebra and Its Applications*,
- *Advances in Mathematics of Communications*,
- *Discrete Applied Mathematics*,
- *Bulletin of the Malaysian Mathematical Sciences Society*,
- *Mediterranean Journal of Mathematics*,
- *Journal of Mathematical Cryptology*,
- *IEEE Communications Letters*,
- *IEEE Access*,
- *Applicable Algebra in Engineering, Communication and Computing*,
- *The Art of Discrete and Applied Mathematics*,
- *Ars Combinatoria*,
- *Mathematics*,
- *Symmetry*,
- *Applied Sciences*.

Reviewer for Mathematical Reviews and Zentralblatt MATH.

Reviewer for the international conferences:

- WCC 2024,
- IWSDA'2022,
- WCC 2022,
- 2021 IEEE Information Theory Workshop (ITW),
- MEGA 2021,
- WAIFI 2020,
- A2C,
- MEGA 2019.

Reviewer for the Ph.D. Thesis of Francesco Ghiandoni, University of Florence, University of Perugia, INDAM, Italy (2024).

Reviewer for the Ph.D. Thesis of Stefania Caputo, University of Basilicata, Italy (2021).

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## Associations

- 2020 – today Member of *UMI*, Unione Matematica Italiana.
- 2018 – 2020 Member of the *INDAM*, Istituto italiano di alta matematica, group for algebraic and geometric structures (GNSAGA).
- 2018– today Member of *De componendis cifris*.

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## Mentoring experience

- Postdoc supervised Martin Scotti. November 2025-October 2027, within the Orient's Fond grant.
- Master student supervised Esben Dissing Bregnballe. January 2025. Title: *Convolutional codes*.
- Ph.D. Student supervised on specific project Francesco Ghiandoni, University of Florence, University of Perugia, INDAM , August-September 2024. Title *Quasi-cyclic codes from AG codes*.
- Ph.D. Student supervised on specific project Arianna Dionigi, University of Florence, University of Perugia, INDAM , August-September 2024. Title *Quasi-cyclic codes from AG codes*.
- Master student co-supervised Laurits Gorm Dahl. June 2024. Title: *Lightweight cryptography for use in low-capacity computers*.
- Master student co-supervised Johan Venster Dinesen. June 2023. Title: *Group testing, error correcting codes, and associated algebraic & geometrical structures*.
- Master student co-supervised Rasmus Bod Olesen. June 2023. Title: *Locally recoverable codes*.
- Bachelor student co-supervised Martin Sig Nørbjerg. June 2023. Title: *Algebraic curves over finite fields and error correcting codes*.
- Bachelor student co-supervised Sigrid Schrøder Jensen. June 2022. Title: *Lattice Theory in Mathematical Cryptography*.
- Bachelor student co-supervised Laurits Gorm Dahl. June 2022: *A comparison of GASP- and entangled polynomial codes for secure distributed matrix multiplication*.
- Bachelor project co-supervised Mikkel Lie, Christopher Memhave Petersen, Mathias Damsgaard Kristensen, Christian Boslev Søndergaard. June 2022. Title: *Elliptic Curves and Post-Quantum Cryptography*.
- Ph.D. Student co-supervised on specific project Giuseppe Cotardo, University College Dublin, February-December 2022. Title *Rank-metric codes with prescribed tensor rank arising from AG codes*.
- Master student co-supervised Juri Nacciarriti, Università degli Studi di Perugia. February 2022. Title: *Cryptanalysis of chipers based on Algebraic Geometry codes*.

- Master student co-supervised Lara Vicino, Università degli Studi di Trento. July 2020. Title: *On the cubic Norm-Trace curve and its AG codes*.
- Master student co-supervised Luca Girardi, Università degli Studi di Trento, October 2018. Title: *On the minimum distance of AG codes over the GGS curve*.

## Service

- 04/2026– today Member of the Censors for Mathematics programs in Denmark.
- 02/2026– today Member of the Censors for Civil engineering programs in Denmark.
- 10/04/2025 Opponent for the Ph.D. defense of Francesco Ghiandoni, University of Florence, University of Perugia, INDAM.
- 2024 Organizer of the "Algebraic coding theory" special session at the 2nd AMS-UMI International Joint Meeting.
- 2024 Member of the local committee of the conference WCC 2024: The Thirteenth International Workshop on Coding and Cryptography.
- 01/2024–today Organizer of the seminar in the "Blue Mathematics" series, Aalborg University.
- 01/2024–today Member of the department council, Department of Mathematical Sciences, Aalborg University.
- 2023 Member of the local committee of the second UMI's Conference of Coding Theory and Cryptography.
- 2023 Organizer of the "Algebraic coding theory and cryptography" special session at the 29th Nordic Congress of Mathematicians with EMS.
- 2021 Member of the organizing committee and scientific committee of the first UMI's Conference of Coding Theory and Cryptography.
- 01/2021–01/2023 Organizer of the UMI's seminar of Coding Theory and Cryptography.
- 12/2016 – 12/2018 Ph.D. Students representative, Università degli Studi di Trento.
- 12/2010 – 10/2015 Students representative, Università degli Studi di Perugia.

## Other activities

- 2022 Successful completion of the "University Pedagogical Programme at Aalborg University".
- 2020 Invited speaker to a divulgative event at ITET Fontana, conference title: "Cryptocurrencies", Rovereto (TN), Italy.
- 2016 Member of the organizing Committee of the "Digital Signature awareness contest".

## Computer skills

- MAGMA** Expert user
- L<sup>A</sup>T<sub>E</sub>X** Expert user
- Linux** User
- Windows** User

|                       |            |
|-----------------------|------------|
| <b>Office Package</b> | User       |
| <b>C</b>              | Basic user |
| <b>Matlab</b>         | Basic user |
| <b>Maple</b>          | Basic User |

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## Languages

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|----------------|--------------------|
| <b>Italian</b> | Mother tongue      |
| <b>English</b> | Fluent             |
| <b>Danish</b>  | Upper-intermediate |
| <b>French</b>  | Beginner           |

Updated: June 10, 2026