Marco Timpanella

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Personal Information

Born on 12/05/1992 in Gaeta (LT), Italy.

Resident in Perugia (PG), Italy, at Via Giacomo Puccini 22, 06134.

Tax Code: TMPMRC92E12D843S.

Scientific High School Diploma **2006–2011**
Liceo Scientifico Statale "Galileo Galilei", Perugia (Italy)
Final grade: 100/100 cum laude.

Research Interests

Geometric Structures over Finite Fields, Coding Theory, Cryptography.

Education and positions

Tenure-track Researcher (RtdB) **16.10.2024–present**
University of Perugia, Perugia (Italy) (S.S.D MATH-02/B)

Fixed-term Researcher (RtdA) **01.01.2022–15.10.2024**
University of Perugia, Perugia (Italy)
Research project: "Mathematical Methods for Digital Signatures and Cloud Computing" (S.S.D MATH-02/B).

Postdoctoral Fellow **01.09.2021–31.12.2021**
University College Dublin, Dublin (Ireland)
Research project: "Algebraic curves over finite fields and their applications to coding theory and cryptography".

Research Fellow **01.12.2020–31.08.2021**
University of Campania "Luigi Vanvitelli", Caserta (Italy)
Research project: "Coding Theory and Applications to Encryption" (S.S.D MAT/03).

Ph.D. in Mathematics and Computer Science (XXXIII cycle) **01.11.2017–01.11.2020**
University of Basilicata - University of Salento (Italy)
Thesis title: "Algebraic curves over finite fields and their applications"; supervisor: Prof. G. Korchmáros.
Final grade: excellent cum laude.
Scholarship on the project "Development and implementation of cybersecurity tools for local companies using a Combinatorial Geometry approach", Industry 4.0.

Master's Degree in Mathematics **19.10.2015–28.04.2017**
University of Perugia, Perugia (Italy)
Thesis title: "Codes from maximal curves"; supervisor: Prof. M. Giulietti.
Final grade: 110/110 cum laude.

Bachelor's Degree in Mathematics **10.10.2011–25.02.2015**
University of Perugia, Perugia (Italy)
Thesis title: "Preorders and representations via families of continuous functions"; supervisor: Prof. A. Caterino.
Final grade: 110/110 cum laude.

Grants, scholarships and awards

Thomas Mitchell Medal of Excellence **2021**
Irish Research Council

Awarded as the top-ranked researcher in the STEM area (*https://research.ie/what-we-do/loveirishresearch/blog/top-ranked-irc-postgraduate-and-postdoctoral-researchers-awarded-the-2021-medals-of-excellence/*).

National Scientific Qualification for Associate Professor **2023**
Field 01/A2 - Geometry and Algebra.
Awarded on 24/10/2023 (VI term), valid until 24/10/2035.

French Scientific Qualification for the Position of Maître de Conférences **2024**
CNU Section 25 Mathematics (*N. de qualification: 24225402149*).

French Scientific Qualification for the Position of Maître de Conférences **2024**
CNU Section 27 Computer Science (*N. de qualification: 24227402149*).

Early Career Travel Award **2023**
Society for Industrial and Applied Mathematics (*SIAM*)
For participation in the "2023 SIAM Conference on Applied Algebraic Geometry".

Postdoc Grant **2021**
Irish Research Council
Project: "Algebraic curves over finite fields and their applications to coding theory and cryptography", EUR 96,417.
Only winner in the *"Pure Mathematics"* section.
Project ranked top in the STEM (Science, Technology, Engineering, and Mathematics) category.

Postdoctoral fellowship **2020**
Coding and Information Theory at Simula Group's
EUR 160,000, *declined*.

Funding from INdAM Group (GNSAGA) **2019**
For participation in "SIAM 2019".

Funding from the Bolyai Institute **2019**
For a research stay at the Bolyai Institute.

Funding from the University of Primorska **2018**
For participation in the 8th PhD Summer School in Discrete Mathematics, Rogla (*Slovenia*).

Ph.D. Scholarship **2018**
University of Salento / University of Basilicata

Ph.D. Scholarship **2018**
University of Trento
Declined.

Organization, Management, and Coordination of National and International Research Groups, or Participation in Them

Coordinator of the Following National Scientific Projects

GNSAGA-INDAM 2023 Research Project: "Algebraic Curves and Their Applications" (code CUPE55F22000270001). Participants: A. Dionigi, B. Gatti, F.A. Rossi.

Participation in the Following National Research Groups

- P.R.I.N. 2020 Project "Galois Geometries and Incidence Structures" (*not funded*). Project coordinator: M. Buratti.
- Member of the UMI Group "Cryptography and Codes".
- Founding member of the National Cryptography Association "De componendis Cifris" (*https://www.decifris.it/*).
- Member of the INdAM National Research Group on Algebraic and Geometric Structures and Their Applications (GNSAGA).

Organizer of the Following Scientific Events

Member of the Scientific Committee and Organizer: for the annual conference of the UMI Group on

Cryptography and Codes, 5.09.2024–6.09.2024 (*https://sites.google.com/view/crittografiaecodici/convegno-2024*).

Member of the Scientific Committee and Organizer: for the seminar series of the UMI Group "Codes and Cryptography", 2024–present (*https://sites.google.com/view/crittografiaecodici/online-seminars*).

Member of the Scientific Committee and Organizer: for the workshop "Algebraic Curves over a Finite Field", 13.06.2023–16.06.2023 (*https://www.marcotimpanella.com/eventi/algebraic-curves-over-a-finite-field*).

Member of the Scientific Committee and Organizer: for the seminars "Galois Geometry and Their Applications e-Seminars", 2021–present (*https://sites.google.com/view/galoisgeometriesapplications/seminars*).

Member of the Scientific Committee and Organizer: for the seminars "Galois Geometry and Their Applications Young e-Seminars", 2021–present (*https://sites.google.com/view/galoisgeometriesapplications/young-seminars*).

Member of the Local Organizing Committee: for the conference "The Thirteenth International Workshop on Coding and Cryptography" WCC2024, 17.06.2024–21.06.2024 (*https://wcc2024.sites.dmi.unipg.it/*).

Member of the Local Organizing Committee: for the annual conference of the UMI Group on Cryptography and Codes, 21.09.2023–22.09.2023 (*https://sites.google.com/view/crittografiaecodici/convegno-2023*).

Organizational and Coordination Activities

- Member of the Executive Committee of the UMI Group "Cryptography and Codes" (01.10.2023 – 01.10.2026).
- Member of the Executive Board of the Department of Mathematics and Computer Science for the academic triennium 2022/2025 (1.11.2022 – 31.10.2025).
- Member of the Departmental Research Committee (Department of Mathematics and Computer Science).

Speaker at National and International Conferences

Invited talks

AMS-UMI International Joint Meeting 2024 **25.07.2024**
Palermo (Italy)
Talk title: "*On Weierstrass semigroups and good AG codes*".

SIAM Conference on Applied Algebraic Geometry (AG23) **13.07.2023**
Eindhoven University of Technology, Eindhoven (Netherlands)
Talk title: "*Algebraic Geometric Methods in Coding Theory and Cryptography: Some Recent Results*".

29th Nordic Congress of Mathematicians (with EMS) **07.07.2023**
Aalborg (Denmark)
Talk title: "*Algebraic varieties over finite fields in Coding Theory and Cryptography: some recent results*".

XII Festa di Scienza e Filosofia **21.04.2023**
Foligno (Italy)
Talk title: "*Privacy and security: a bridge between Cryptography and Coding Theory*".

Algebra and Number Theory Seminars **10.02.2022**
University College Dublin (Ireland)
Talk title: "*On a generalization of Bring's curve*".

eSeminar "Galois Geometries and Their Applications: young seminars" **02.03.2021**
University of Campania "Luigi Vanvitelli", Caserta (Italy)
Talk title: "*Algebraic curves and (one of) their applications*".

De Cifris meets Perugia **16.10.2019**
University of Perugia, Perugia (Italy)
Talk title: "*A concrete application of elliptic curve cryptography*".

SIAM Conference on Applied Algebraic Geometry 2019 **12.07.2019**
University of Bern (Switzerland)
Talk title: "*Codes and gap sequences of Hermitian curves*".

Contributed talks

Combinatorics 2024 **03.06.2024**
Carovigno (Italy)
Talk title: "*Scattered trinomials of $\mathbb{F}_{q^6}[X]$ in even characteristic*".

CIFRIS23 **14.12.2023**
Rome (Italy)
Talk title: "*On a generalization of the Deligne-Lusztig curve of Suzuki type and application to AG codes*".

XXII Congress of the Italian Mathematical Union **07.09.2023**
Pisa (Italy)
Talk title: "*Some recent developments on Algebraic-Geometric codes*".

International Conference on Finite Fields and Their Applications 2023 (Fq15) **22.06.2023**
Campus Condorcet, Aubervilliers (France)
Talk title: "*Algebraic curves in positive characteristic and their invariants*".

Seminar series of the Mathematics Degree Program **28.04.2023**
University of Perugia, Perugia (Italy)
Talk title: "*New challenges (and solutions) in Cryptography: quantum computers and privacy*".

Young researchers@DMI **08.02.2023**
University of Perugia, Perugia (Italy)
Talk title: "*Algebraic curves and their applications*".

WAIFI 2022 **30.08.2022**
Chengdu (China)
Talk title: "*PIR codes from combinatorial structures*".

Combinatorics 2022 **30.05.2022**
University of Modena and Reggio Emilia (Italy)
Talk title: "*A generalization of Bring's curve in any characteristic*".

Cryptography and Coding Theory First Annual Conference **22.09.2021**
Italian Mathematical Union and De Componendis Cifris
Talk title: "*PIR codes from combinatorial structures*".

Presentation of Industrial PhD Projects **19.02.2019**
University of Basilicata (Italy)
Talk title: "*Algebraic Curves: from Coding Theory to Cryptography*".

Combinatorics 2018 **04.06.2018**
University of Trento (Italy)
Talk title: "*On the Dickson-Guralnick-Zieve curve*".

University Teaching Activities in Italy and Abroad

PhD Courses

Algebraic curves and applications to cryptography and coding theory (20 hours) **A.Y. 2023–2024**
University of Naples "Federico II"

Galois theory and applications (24 hours) **A.Y. 2023–2024**
University of Florence in consortium with the University of Perugia and INdAM

Galois theory and applications (30 hours) **A.Y. 2022–2023**
University of Florence in consortium with the University of Perugia and INdAM

An introduction to elliptic curves over finite fields (8 hours) **A.Y. 2019–2020**
Eötvös Loránd University, Budapest, (Hungary)

Elliptic curves over finite fields and Cryptography (20 hours) **A.Y. 2018–2019**
Bolyai Institute, Szeged, (Hungary)

Suzuki groups and their geometries (6 hours) **A.Y. 2019–2020**
University of Basilicata, Potenza, (Italy)

Bachelor and Master Courses

2024–2025

Co-teaching "*Algebra I*"
University of Perugia
For the Bachelor's Degree in Mathematics (7 hours)

Teaching "*Geometry I*"
University of Perugia
For the Master's Degree in Building Engineering-Architecture (54 hours)

Teaching "*Geometry and Computer Science*"
University of Perugia, Terni scientific-didactic center
For the Bachelor's Degree in Industrial Engineering (45 hours)

Teaching "*Cryptography and Applications - Mod II*"
University of Perugia
For the Master's Degrees in Mathematics and Computer Science (42 hours)

2023–2024

Teaching "*Cryptography and Applications - Mod II*"
University of Perugia
For the Master's Degrees in Mathematics and Computer Science (42 hours)

Teaching "*Geometry and Computer Science*"
University of Perugia, Terni scientific-didactic center
For the Bachelor's Degree in Industrial Engineering (45 hours)

Supplementary teaching "*Algebra II*"
University of Perugia
For the Bachelor's Degree in Mathematics (10 hours)

Supplementary teaching "*Geometry II*"
University of Perugia
For the Bachelor's Degree in Mathematics (20 hours)

Co-teaching "*Data Security*"
Higher Technological Institute (ITS Umbria Academy)
Course for higher technician in Cybersecurity – Two-year period 2023-2025 (20 hours)

Teaching "*Mathematics*"
Higher Technological Institute (ITS Umbria Academy)
Course for higher technician in Information Technology – Section B – Two-year period 2023-2025 (30 hours)

Co-teaching "*Mathematics*"
Higher Technological Institute (ITS Umbria Academy)
Course for higher technician in Information Technology – Section A – Two-year period 2023-2025 (15 hours)

2022–2023

Co-teaching "*Cryptography and Applications*"
University of Perugia
For the Master's Degrees in Mathematics and Computer Science (14 hours)

Co-teaching "*Geometry and Computer Science*"
University of Perugia, Terni scientific-didactic center
For the Bachelor's Degree in Industrial Engineering (22 hours)

Supplementary teaching "*Algebra II*"
University of Perugia
For the Bachelor's Degree in Mathematics (10 hours)

Supplementary teaching "*Geometry II*"
University of Perugia
For the Bachelor's Degree in Mathematics (20 hours)

Co-teaching "*Data Security*"
Higher Technological Institute (*ITS Umbria Academy*)
Higher technician for architectures and infrastructures for communication systems with specialization in Cybersecurity (Cybersecurity Specialist) – Section C – Two-year period 2022-2024 (20 hours)

Adjunct professor for the course "*Mathematics*"
University of Perugia
Preparation course for TOLC-MED and TOLC-VET 2023/2024 admission tests (18 hours)

2021–2022

Co-teaching "*Cryptography and Applications*"
University of Perugia
For the Master's Degrees in Mathematics and Computer Science (21 hours)

Adjunct professor for the course "*Mathematics*"
University of Perugia
Preparation course for admission exams to the Bachelor's Degrees in Medicine and Surgery, Department of Experimental Medicine (22 hours)

Lecture for the course "De Cifris Trends in Modern Cryptography"
University of Trento
Lecture title: "*Problems on codes*".

2019–2020

Adjunct professor for the course "*Mathematics*"
University of Perugia
Preparation course for admission exams to the Bachelor's Degrees in Medicine and Surgery, Department of Experimental Medicine (22 hours)

Additional Teaching Activities

Member of the examination board **A.Y. 2023–2024**
University of Perugia
For the courses "*Algebra I*", "*Geometry I*", "*Geometry II*", "*Geometry III*" for the Bachelor's Degree in Mathematics and "*Cryptography and Applications-Mod I and Mod II*" for the Master's Degrees in Mathematics and Computer Science (38 hours)

Member of the examination board **A.Y. 2022–2023**
University of Perugia
For the courses "*Algebra I*", "*Geometry I*", "*Geometry II*", "*Geometry III*" for the Bachelor's Degree in Mathematics and "*Cryptography and Applications-Mod I and Mod II*" for the Master's Degrees in Mathematics and Computer Science (73 hours)

Member of the examination board **A.Y. 2021–2022**
University of Perugia
For the courses "*Algebra I*", "*Geometry II*" for the Bachelor's Degree in Mathematics and "*Cryptography and Applications-Mod I and Mod II*" for the Master's Degrees in Mathematics and Computer Science (58 hours)

Member of the examination board **A.Y. 2020–2021**
University of Perugia
For the courses "*Algebra I*", "*Geometry II*" for the Bachelor's Degree in Mathematics and "*Cryptography and Applications*" for the Master's Degrees in Mathematics and Computer Science (18 hours)

Title awarded as "*Subject Expert*": for the courses "Geometry II" and "Algebra I" for the Bachelor's Degree in Mathematics, *University of Perugia*, (2017/2018 – present).

Title awarded as "*Subject Expert*": for the course "Cryptography and Applications" for the Master's Degrees in Mathematics and Computer Science, *University of Perugia*, (2017/2018 – present).

Member of the Trainer Registry at ITS Umbria Academy: for the training units: Cyber Security and

Data Security (2023 – present) and Mathematics (2024 – present).

Theses Supervised

- L. Lucarini, *Protocols for Secure Multiparty Computation*, Master's Degree in Mathematics, University of Perugia, A.Y. 2023–2024.
- F. Sibille, *Post-Quantum Threshold Signatures*, Master's Degree in Mathematics, University of Perugia, A.Y. 2023–2024.
- E. Mezzano, *Algebraic Geometry Codes in Cryptography*, Master's Degree in Mathematics, University of Perugia, A.Y. 2024–2025.
- F. Martini, *Linear Codes and Error Correction Algorithms for NAND Memories*, Master's Degree in Mathematics, University of Perugia, A.Y. 2023–2024.
- P. Martinelli, *Somewhat Homomorphic Encryption*, Master's Degree in Mathematics, University of Perugia, A.Y. 2023–2024.
- A. Ficola, *Cryptography Based on Isogenies*, Master's Degree in Mathematics, University of Perugia, A.Y. 2023–2024.
- P. Sgammini, *History and Evolution of Machines for Drawing Trochoids. From Suardi's Geometrical Pen to the Spirograph*, Master's Degree in Mathematics, University of Perugia, A.Y. 2022–2023.
- A. Giannoni, *Exceptional Scattered Sequences*, Master's Degree in Mathematics, University of Perugia, A.Y. 2022–2023.
- B. Benfaremo, *Codes for Cloud Computing*, Master's Degree in Mathematics, University of Perugia, A.Y. 2021–2022.
- A. Sonaglioni, *Post-Quantum Cryptography for Digital Signatures*, Master's Degree in Mathematics, University of Perugia, A.Y. 2021–2022.
- G. Taddei, *Digital Signatures for Cryptocurrencies*, Master's Degree in Mathematics, University of Perugia, A.Y. 2021–2022.

Seminars & Public Engagements

Apericerca 2024 **19.12.2024**
University of Perugia, with Magazzini Creativi and the patronage of the Municipality of Perugia
Event Title: "*The Traps of Mathematics: From Caesar to Quantum Computers*".

Hands-on Cryptography **08.03.2023**
Orientation activity for students from the "Galeazzo Alessi" high school

Preparation Lecture for the "Premio Danti 2023" Math Competition **24.02.2023**
University of Perugia (Italy)
Lecture Title: "*Symmetric Polynomials, Viette's and Newton-Girard's Identities*".

Orientation Webinar for #UnipgOrientaExpress **21.02.2023**
University of Perugia (Italy)
Webinar Title: "*The Mathematics of Cryptography: From Caesar to the Playstation*".

Hands-on Cryptography **13.12.2022**
Orientation activity for students from the "Jacopone da Todi" high school

Lecture for the National Competition "Cyberchallenge.it" **07.04.2022**
University of Perugia (Italy)
Lecture Title: "*RSA and Primality Tests*".

Preparation Webinar for the "Premio Danti 2022" Math Competition **09.03.2022**
University of Perugia (Italy)
Webinar Title: "*Introduction to Graph Theory*".

Seminar at Smart P@per S.p.a **23.05.2018**
University of Basilicata (Italy)
Seminar Title: "*Public Key Cryptography*".

Seminar at Smart P@per S.p.a **21.05.2018**
University of Basilicata (Italy)

Seminar Title: "*Symmetric Cryptography*".

Editorial/Referee Activities

Member of the Editorial Board of the Following Journals

De Cifris Koine (`https://www.decifris.it/koine/editorial-board`)

Referee for the Following International Journals

Journal of Algebra (1)
IEEE Transactions on Information Theory (1)
IEEE Transactions on Communications (1)
Finite Fields and Their Applications (27)
Advances in Mathematics of Communications (5)
Designs, Codes and Cryptography (14)
Ars Combinatoria (1)
Cryptography and Communications (2)
Discrete Mathematics (1)
The Art of Discrete and Applied Mathematics (1)
Journal of Applied Mathematics and Computing (1)
Computational and Applied Mathematics (1)
Mathematics (2)
Symmetry (1)
Electronic Research Archive (1)
MathSciNet (11)
zbMATH Open (6)

Referee for the Following International Conferences

"The Thirteenth International Workshop on Coding and Cryptography" WCC2024.
"International Workshop on the Arithmetic of Finite Fields" WAIFI 2020.

Scientific Publications

Published Articles

1: M. Montanucci, M. Timpanella, G. Zini, *AG codes and AG quantum codes from cyclic extensions of the Suzuki and Ree curves*, Journal of Geometry vol. 109, 23 (2018). (DOI: 10.1007/s00022-018-0428-0)

2: M. Giulietti, G. Korchmáros, M. Timpanella, *On the Dickson-Guralnick-Zieve curve*, Journal of Number Theory vol. 196, 114-138 (2019). (DOI: 10.1016/j.jnt.2018.09.020)

3: D. Bartoli, M. Timpanella, *On a generalization of planar functions*, Journal of Algebraic Combinatorics, vol. 52, 187-213 (2020). (DOI: 10.1007/s10801-019-00899-2)

4: G. Korchmáros, G. P. Nagy, M. Timpanella, *Codes and gap sequences of Hermitian curves*, IEEE Transactions on Information Theory, vol. 66, 3547-3554 (2020). (DOI: 10.1109/TIT.2019.2950207)

5: D. Bartoli, M. Timpanella, *A family of planar binomials in characteristic 2*, Finite Fields and Their Applications vol. 63, 101651 (2020). (DOI: 10.1016/j.ffa.2020.101651)

6: D. Bartoli, M. Timpanella, *A family of permutation trinomials in* $\mathbb{F}_{q^2}$, Finite Fields and Their Applications vol. 70, 101781 (2021). (DOI: 10.1016/j.ffa.2020.101781)

7: G. Korchmáros, S. Lia, M. Timpanella, *Curves with more than one inner Galois point*, Journal of Algebra vol. 566, 374-404 (2021). (DOI: 10.1016/j.jalgebra.2020.08.024)

8: S. Lia, M. Timpanella, *Bound on the order of the decomposition groups of an algebraic curve in positive characteristic*, Finite Fields and Their Applications vol. 69, 101771 (2021). (DOI: 10.1016/j.ffa.2020.101771)

9: D. Bartoli, M. Timpanella, *On trinomials of type* $X^{n+m}(1 + AX^{m(q-1)} + BX^{n(q-1)})$, n, m *odd, over* $\mathbb{F}_{q^2}$, $q = 2^{2s+1}$, Finite Fields and Their Applications, vol. 72, 101816 (2021). (DOI: 10.1016/j.ffa.2021.101816)

10: D. Bartoli, M. Bonini, M. Timpanella, *On the weight distribution of some minimal codes*, Designs, Codes and Cryptography, vol. 89, 471-487 (2021). (DOI: 10.1007/s10623-020-00826-8)

11: S. Lia, M. Timpanella, *AG codes from* $\mathbb{F}_{q^7}$*-rational points of the GK curve*, Applicable Algebra in Engineering, Communication and Computing, (2021). (DOI: 10.1007/s00200-021-00519-2)

12: M. Bonini, S. Lia, M. Timpanella, *Minimal linear codes from Hermitian varieties and quadrics*, Applicable Algebra in Engineering, Communication and Computing, (2021). (DOI: 10.1007/s00200-021-00500-z)

13: D. Bartoli, M. Giulietti, M. Timpanella, *2-1 functions from Galois extensions*, Discrete Applied Mathematics, vol. 309, 194-201 (2021). (DOI: 10.1016/j.dam.2021.12.008)

14: D. Bartoli, M. Timpanella, *On a conjecture on APN permutations*, Cryptography and Communications, vol. 14, 925-931 (2022). (DOI: 10.1007/s12095-022-00558-7)

15: D. Bartoli, M. Calderini, M. Timpanella, *Exceptional crooked functions*, Finite Fields and Their Applications, vol. 84, 102109 (2022). (DOI: 10.1016/j.ffa.2022.102109)

16: M. Giulietti, A. Sabatini, M. Timpanella, *PIR codes from combinatorial structures*, Arithmetic of Finite Fields, WAIFI 2022, Lecture Notes in Computer Science, vol. 13638. Springer, Cham (2023). (DOI: 10.1007/978-3-031-22944-2_ 10)

17: M. Timpanella, G. Zini, *On a family of linear MRD codes with parameters* $[8 \times 8, 16, 7]_q$, Designs, Codes and Cryptography, vol. 92(1), 507–530 (2023). (DOI: 10.1007/s10623-022-01179-0)

18: D. Bartoli, M. Timpanella, *Investigating perfect nonlinear rational functions*, Annali di Matematica Pura e Applicata, vol. 202(6), 2767-2784 (2023). (DOI: 10.1007/s10231-023-01339-6)

19: D. Bartoli, M. Bonini, M. Timpanella, *Minimal codewords in Norm-Trace codes*, Aequationes mathematicae, vol. 98(2), 1-14 (2023). (DOI: 10.1007/s00010-023-00985-8)

20: L. Landi, M. Timpanella, L. Vicino, *Two-point AG codes from one of the Skabelund maximal curves*, IEEE Transactions on Information Theory, (2024). (DOI: 10.1109/TIT.2024.3351862)

21: A. Iezzi, M. Q. Kawakita, M. Timpanella, *New sextics of genus 6 and 10 attaining the Serre bound*, Advances in Geometry, vol 24(1), 99-109 (2024). (DOI: 10.1515/advgeom-2023-0031)

22: M. Timpanella, *On AG codes from a generalization of the Deligne-Lustzig curve of Suzuki type*, Journal of Mathematical Cryptology, vol. 18, 1 (2024). (DOI: 10.1515/jmc-2023-0024)

23: D. Bartoli, G. Longobardi, G. Marino, M. Timpanella, *Scattered trinomials of* $\mathbb{F}_{q^6}[X]$ *in even characteristic*, in Finite Fields and Their Applications, vol. 97, 102449 (2024). (DOI: 10.1016/j.ffa.2024.102449)

24: M. Giulietti, P. Martinelli, M. Timpanella, *Modern Techniques in Somewhat Homomorphic Encryption*, Journal of Mathematical Cryptology, vol. 19, no. 1, (2025). (DOI: 10.1515/jmc-2024-0041)

25: D. Bartoli, M. Timpanella, *Complete* $(q+1)$*-arcs in* $\mathrm{PG}(2, \mathbb{F}_{q^6})$ *from the Hermitian curve*, to appear in Journal of Algebraic Combinatorics

Articles Submitted for Publication

26: G. Korchmáros, S. Lia, M. Timpanella, *A generalization of Bring's curve in any characteristic*.

27: D. Bartoli, M. Timpanella, *Further results on a family of bent functions from permutations.*

28: A. Dionigi, M. Giulietti, M. Timpanella, *Algebraic curves with a large cyclic automorphism group*.

29: D. Bartoli, N. Durante, G.G. Grimaldi, M. Timpanella, *Ovoids of* $Q^+(7, q)$ *of low-degree*.

30: S. Bistarelli, I. Mercanti, P. Santancini, F. Santini, M. Timpanella, *A Decentralized and Privacy-Preserving Voting System with Enigma*.

Articles in Preparation

31: M. Giulietti, G. Korchmáros, M. Timpanella, *Automorphism groups of algebraic curves and p-ranks*.

32: A. Giannoni, G.G. Grimaldi, G. Longobardi, M. Timpanella, *Characterizing a family of scattered*

quadrinomials.

33: D. Bartoli, G.G. Grimaldi, M. Timpanella, *Complete $(q+1)$-arcs in $\mathrm{PG}(2,q^4)$ from the BKS curve*.

34: M. Giulietti, F. Ghiandoni, G.G. Grimaldi, E. Mezzano, M. Timpanella, *AG codes from the Hermitian curve for Private Information Retrieval*.

Summer Schools Attended

Online Summer School in Algebraic Coding Theory **07–11 Jun 2021**
University of Zurich (*Switzerland*)

2nd Scientific School on Blockchain and Distributed Ledger Technologies **10–14 Jun 2019**
Technology Park of Sardinia, Pula (*Italy*)

Summer School in Mathematics (SMI) **23 Jul – 17 Aug 2018**
University of Perugia (*Italy*)
Courses attended:
- Commutative Algebra and Geometry;
- Complex Analysis.

8th PhD Summer School in Discrete Mathematics **01–07 Jul 2018**
Rogla, (*Slovenia*)

Skills

English Language Proficiency

C1 *Oxford School of Languages certificate*

Computer Skills

Application: MAGMA, C++, R, MATLAB **Documentation**: MS Office, LaTeX

I, Marco Timpanella, declare that all the information provided in this CV is true, in accordance with Articles 46 and 47 of the Italian Presidential Decree (D.P.R.) 445/2000. I am aware of the criminal penalties I may incur in case of false statements or incorrect data, as provided by Article 76 of the Italian Presidential Decree (D.P.R.) 445/2000, dated December 28, 2000. I am also aware of the provisions of Article 75 of the Italian Presidential Decree (D.P.R.) 445/2000, which states the forfeiture of benefits that may result from the act issued, should the Administration find the contents of the declaration to be false after verification. For this purpose, I attach a copy of my valid identity document.

Perugia, 30 agosto 2025