

Marco Marengon

Curriculum Vitae

Employment

- 09/2021–today **Research Fellow**, *Alfréd Rényi Institute for Mathematics*, Hungary.
Sponsored by Marie Skłodowska-Curie Action MM-CAFH
- 09/2020–08/2021 **Postdoctoral Fellow**, *Max Planck Institute for Mathematics*, Germany.
- 09/2017–06/2020 **Assistant Adjunct Professor**, *UCLA*, USA.

Education

- 09/2013–07/2017 **Ph.D.**, *Imperial College London*, UK.
Ph.D. thesis '**Heegaard Floer homology and link cobordisms**', supervised by Prof. András Juhász.
- 10/2008–07/2013 **Science diploma** (Corso ordinario – Classe di Scienze) in Mathematics, *Scuola Normale Superiore*, Pisa (Italy), final score 70/70.
- 09/2011–07/2013 **Master of Science** (Laurea Magistrale) in Mathematics, *University of Pisa*, Italy, final score 110 Cum Laude/110.
Master's thesis '**On infinite families of non-quasi-alternating thin knots**', supervised by Prof. Paolo Lisca.
- 09/2008–07/2011 **Bachelor of Science** (Laurea Triennale) in Mathematics, *University of Pisa*, Italy, final score 110 Cum Laude/110.
Bachelor's thesis '**Theory of the topological fundamental group according to Grothendieck**' (in Italian), supervised by Prof. Angelo Vistoli.

Visiting periods

- 04/2017–07/2017 **Visiting researcher**, *University of Cambridge*, UK.
- 11/2016 **Visiting student research collaborator**, *Princeton University*, USA.
- 04/2015–06/2015 **Visiting student**, *University of Oxford*, UK.
- 10/2012–12/2012 **Exchange programme**, *École Normale Supérieure*, Paris (France).

Preprints

- (with N. M. Dunfield, S. Gong, T. Hockenhull, and M. Willis) **On the rank of knot homology theories and concordance** (2023) – <https://arxiv.org/abs/2303.04233>
- (with A. N. Miller, A. Ray, and A. I. Stipsicz) **A note on surfaces in $\mathbb{C}P^2$ and $\mathbb{C}P^2\#\mathbb{C}P^2$** (2022) – <https://arxiv.org/abs/2210.12486>

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(with S. Mihajlović) **Unknotting number 21 knots are slice in K3** (2022) – <https://arxiv.org/abs/2210.10089>

(with C. Manolescu and L. Piccirillo) **Relative genus bounds in indefinite four-manifolds** (2020) – <https://arxiv.org/abs/2012.12270>

Accepted for publication

(with S. Gong) **Non-orientable link cobordisms and torsion order in Floer homologies** (2020) – <https://arxiv.org/abs/2010.06577>. Accepted for publication in *Algebr. Geom. Topol.*

Publications

(with C. Manolescu, S. Sarkar, and M. Willis) **A generalization of Rasmussen's invariant, with applications to surfaces in some four-manifolds** (*Duke Math. J.*, vol. 172, iss. 2, pp. 231–311, 2023) – <https://arxiv.org/abs/1910.08195>

(with A. Manion and M. Willis) **Generators, relations, and homology for Ozsváth–Szabó's Kauffman-states algebras** (*Nagoya Math. J.*, vol. 244, pp. 60–118, 2021) – <http://arxiv.org/abs/1903.05654>

(with A. Manion and M. Willis) **Strands algebras and Ozsváth–Szabó's Kauffman-states functor** (*Algebr. Geom. Topol.*, vol. 20, iss. 7, pp. 3607–3706, 2020) – <http://arxiv.org/abs/1903.05655>

(with C. Manolescu) **The Knight Move Conjecture is false** (*Proc. Amer. Math. Soc.*, vol. 148, iss. 1, pp. 435–439, 2020) – <http://arxiv.org/abs/1809.09769>

(with M. Golla) **Correction terms and the non-orientable slice genus** (*Michigan Math. J.*, vol. 67, iss. 1, pp. 59–82, 2018) – <http://arxiv.org/abs/1607.08117>

(with A. Juhász) **Computing cobordism maps in link Floer homology and the reduced Khovanov TQFT** (*Selecta Math. (N.S.)*, vol. 24, pp. 1315–1390, 2018) – <http://arxiv.org/abs/1503.00665>

(with A. Juhász) **Concordance maps in knot Floer homology** (*Geom. Topol.*, vol. 20, pp. 3623–3673, 2016) – <http://arxiv.org/abs/1509.02738>

On d -invariants and generalised Kanenobu knots (*J. Knot Theory Ramifications*, vol. 25, iss. 8, 2016) – <http://arxiv.org/abs/1412.3433>

Grants and Awards

- 02/2020 Marie Skłodowska-Curie Individual Fellowship, European Commission (EU)
- 07/2016 Postdoctoral Mobility Grant, London Mathematical Society (UK)
- 06/2016 Doris Chen Mobility Award, Imperial College (UK)
- 05/2013 EPSRC scholarship, Imperial College London (UK)
- 10/2008 Full scholarship, Scuola Normale Superiore, Pisa (Italy)

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Invited Conference Talks

- 06/2022 Surfaces in 4-manifolds (Le Croisic, France)
- 08/2021 Perspectives on quantum link homology theories (Regensburg, Germany)
- 06/2021 The Nearly Carbon Neutral Geometric Topology Conference (online)
- 01/2020 UCLA Geometry and Topology workshop (UCLA, CA, USA)
- 11/2019 AMS Fall Western Sectional Meeting (UC Riverside, CA, USA)
- 07/2019 Quantum Field Theory and Manifold Invariants (Park City, UT, USA)
- 05/2018 Perspectives on bordered Heegaard Floer theory (Montréal, Canada)

Contributed Conference Talks

- 07/2022 Topology workshop (Oberwolfach, Germany)
- 07/2019 Quantum Field Theory and Manifold Invariants (Park City, UT, USA)
- 06/2016 Perspectives in topology and geometry of 4-manifolds (Dubrovnik, Croatia)

Invited Seminar Talks

- 12/2022 IBS Center for Geometry and Physics (South Korea)
- 12/2022 University of Bologna (Italy)
- 12/2022 University of Grenoble (France)
- 10/2022 Alfréd Rényi institute (Hungary)
- 10/2022 Simons Center for Geometry and Physics (USA)
- 10/2022 MIT (USA)
- 10/2022 Louisiana State University (USA)
- 10/2022 Duke University (USA)
- 09/2022 Columbia University (USA)
- 09/2022 Princeton University (USA)
- 09/2022 UCLA (USA)
- 10/2021 Alfréd Rényi institute (Hungary)
- 06/2021 Gauge theory virtual seminar (online)
- 04/2021 UQAM (Canada)
- 01/2021 University of Nantes (France)
- 10/2020 University of Regensburg (Germany)
- 10/2020 Max Planck Institute for Mathematics (Germany)
- 02/2020 UC San Diego (USA)
- 11/2019 UGA/GaTech Joint Topology Seminar (USA)
- 04/2019 California Institute of Technology (USA)
- 04/2019 UC Riverside (USA)
- 11/2018 University of Southern California (USA)
- 11/2018 Louisiana State University (USA)
- 10/2017 UCLA (USA)

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- 12/2016 Princeton University (USA)
- 11/2016 Brandeis University (USA)
- 10/2016 University of Glasgow (UK)
- 05/2016 University of Cambridge (UK)
- 05/2016 University of Aix-Marseille (France)
- 05/2016 University of Toulouse (France)
- 03/2016 Imperial College London (UK)

Organisational activity

Co-organised research semesters

- 01/2023 - 06/2023 **Singularities and low-dimensional topology**, Erdős Center (Hungary).
 This activity includes the co-organisation of 3 international conferences and a winter school.
<https://erdoscenter.renyi.hu/articles/singularities-and-low-dimensional-topology-2023-spring-feb-june>

Other co-organised conferences

- 13-14/06/2016 **ECSTATIC 2** (Early Career Stage Topologists AT Imperial College), Imperial College London (UK)
- 11-12/06/2015 **ECSTATIC** (Early Career Stage Topologists AT Imperial College), Imperial College London (UK)

Co-organised seminars

- 06/06/2014 **Young Topology Meeting**, Imperial College London (UK)
- 2014–2016 **TAKTIC seminar** (Topology And Knot Theory at Imperial College), Imperial College London (UK)

Teaching

- 2017–2020 Instructor at UCLA for the following courses:
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|-------------|--|
| Spring 2020 | MATH 123 - Foundations of Geometry |
| Winter 2020 | MATH 31B - Integration and infinite series |
| Fall 2019 | MATH 31B - Integration and infinite series |
| | MATH 115A - Linear algebra |
| Spring 2019 | MATH 31B - Integration and infinite series |
| | MATH 123 - Foundations of Geometry |
| Winter 2019 | MATH 31B - Integration and infinite series |
| Fall 2018 | MATH 115A - Linear algebra |
| | MATH 235 - Manifold theory |
| Spring 2018 | MATH 115A - Linear algebra |
| | MATH 131A - Analysis |
| Winter 2018 | MATH 115B - Linear algebra |
| | MATH 123 - Foundations of Geometry |
| Fall 2017 | MATH 31B - Integration and infinite series |

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Undergraduate supervision

2018 Xinta Yang (UCLA), co-supervised with Ciprian Manolescu

Service

2017–today Referee for *Algebr. Geom. Topol.*, *Bull. Lond. Math. Soc.*, *Geom. Topol.*, and *Quantum Topol.*

Languages

Italian **Mothertongue**
English **Advanced**
French **Basic**
Hungarian **Basic**

References

András Juhász

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