

# Filippo Baroni

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🌐 [filippobaroni.github.io](https://filippobaroni.github.io)

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## Education

- 2021 – **DPhil**, *University of Oxford*  
Advisor: Marc Lackenby
- 2016 – 2021 Student of mathematics at *Scuola Normale Superiore di Pisa*
- 2019 – 2021 **Master's degree**, *University of Pisa*  
Advisor: Carlo Petronio  
Degree thesis: *Realisability of branching data with a short partition*
- 2016 – 2019 **Bachelor's degree**, *University of Pisa*  
Advisor: Riccardo Benedetti  
Degree thesis: *Singular homology of fibred spaces*

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## Publications and preprints

- 2024 “Uniformly polynomial-time classification of surface homeomorphisms”, preprint ([arXiv:2402.00231](https://arxiv.org/abs/2402.00231))
- 2024 “Classification of genus-two surfaces in  $S^3$ ”, accepted for publication in *Algebraic & Geometric Topology*
- 2024 “Solution of the Hurwitz problem with a length-2 partition” (with Carlo Petronio), in *Illinois Journal of Mathematics* 68.3, pp. 479–511
- 2022 “The Proportionality Principle via Bounded Cohomology”, in *Bounded Cohomology and Simplicial Volume*, pp. 118–131, Cambridge University Press

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## Invited speaker

- Oct 2024 “BRIJGES seminar”, *University of Bristol*  
Talk: *Algorithmic classification of surface homeomorphisms*
- Jun 2024 “Geometry seminar”, *University College London*  
Talk: *Algorithmic classification of surface homeomorphisms*
- May 2024 “Junior geometry seminar”, *University of Cambridge*  
Talk: *Algorithmic classification of surface homeomorphisms*
- Apr 2024 “Manchester geometry seminar”, *University of Manchester*  
Talk: *Algorithmic classification of surface homeomorphisms*
- Apr 2024 “Purdue topology seminar”, *Purdue University*  
Talk: *Algorithmic classification of surface homeomorphisms*
- Jan 2024 “Log cabin workshop: Big mapping class groups”, *Young, AZ, USA*  
Talk: *Actions on hyperbolic spaces*
- Nov 2023 “DAGGER seminar”, *University of Warwick*  
Talk: *Navigating the curve graph with train tracks*

- Jan 2023 “Log cabin workshop: Surfaces in 3-manifolds”, Young, AZ, USA  
Talk: *The virtual fibering theorem*
- Mar 2022 “BabyGeometri seminar”, University of Pisa  
Talk: *An algorithm for unknot recognition*
- Feb 2021 “International young seminar on bounded cohomology and simplicial volume”, online  
Talk: *The proportionality principle via bounded cohomology*

## Teaching

- Oct–Dec 2024 Tutor for *Pure maths*, St Catherine’s College, Oxford
- Apr–Jun 2024 Tutor for *Pure maths*, St Catherine’s College, Oxford
- Jan–Mar 2024 Tutor for *Pure maths and Graph theory*, St Catherine’s College, Oxford
- Oct–Dec 2023 Tutor for *Pure maths*, St Catherine’s College, Oxford
- Apr–Jun 2023 Tutor for *Graph theory*, St Catherine’s College, Oxford
- Jan–Mar 2023 Tutor for *Low-dimensional topology and knot theory*, University of Oxford
- Oct–Dec 2022 Tutor for *Set theory*, University of Oxford
- Oct–Dec 2022 Tutor for *Graph theory*, St Catherine’s College, Oxford
- Apr–Jun 2022 Tutor for *Graph theory*, St Catherine’s College, Oxford
- Jan–Mar 2022 Teaching assistant for *Low-dimensional topology and knot theory*, University of Oxford
- Oct–Dec 2021 Teaching assistant for *Geometry of surfaces*, University of Oxford

*Updated on November 20, 2024.*