Petar Nizić-Nikolac

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Born	2000, Zagreb, Croatia
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Contact	+41 44 633 8192, petar.nizic-nikolac@ifor.math.ethz.ch
Webpage	https://pnizicnikolac.github.io/
Research Interests	Random Matrices, High Dimensional Probability, Statistics, Combinatorics, Optimization, Percolation

Education

PhD in Mathematics

ETH Zürich — *10/2022 - xy/2027*
- Supervisor: Prof. Afonso Bandeira, Second advisor: Prof. Vincent Tassion
- Visiting Simons Institute: Spectral Theory Beyond Graphs, *08/2026 - 12/2026*

MMath (Master of Mathematics)

University of Cambridge, Trinity College — *09/2021 - 06/2022*
- Honours with Distinction

BA (Bachelor of Arts) in Mathematics

University of Cambridge, Trinity College — *09/2018 - 06/2021*
- First Class in each examination session

Mathematical grammar school

XVth Gymnasium Zagreb — *09/2014 - 06/2018*
- Best student of generation 2018

Work Experience

Doctoral Student

ETH Zürich — *10/2022 - xy/2027*
- → Teaching & Mentoring

Quant Research Intern

G-Research (London) — *06/2025 - 08/2025*
- Details omitted

Quant Software Engineer Intern

Squarepoint Capital (London) — *06/2021 - 08/2021*
- Details omitted

Summer Research Intern

University of Cambridge, Faculty of Mathematics — *06/2020 - 09/2020*
- Undergraduate research project, advised by Prof. Tom Hutchcroft (bunkbed conjecture)

Teaching & Mentoring

Teaching Assistant

Teaching:
- *Spring/2026*: Student Seminar on MDS: Randomized Linear Algebra (advisor)
- *Fall/2025*: Mathematics of Data Science (course organizer)
- *Spring/2025*: Mathematics of Signals, Networks, and Learning (course organizer)
- *Fall/2024*: Mathematics of Data Science (course organizer)
- *Spring/2024*: Mathematics of Signals, Networks, and Learning (course organizer)
- *Fall/2023*: Mathematics of Data Science
- *Spring/2023*: Mathematics of Signals, Networks, and Learning

Seminar organization:
- DACO Seminar, *10/2023 - ongoing*

Student Supervision

Master theses:
- Shawn Lim, *ongoing*
- Pavel Kliska: Improved Bounds for Matrix Probing, *2025*
- Mael Macuglia: Mini-Batching Theory: Matrix Product Concentration Methods, *2024*
- Xinmeng Zeng: Matrix Concentration for Products of Independent Gaussian Matrices, *2023*

Bachelor theses:
- Lukas Münzel: Randomized Linear Algebra with Sparse Sketching Matrices, *2026*
- Stefan Hadzhistoykov: Feige's Conjecture on Hypergraphs, *2024*

Semester projects:
- Suei-Wen Chen, *2025*; Vlad Burca, *2025*; Nicolas Hotton, *2023*; Danielle Ludin, *2023*

Service & Outreach

Member	**VMM (Verein des akademischen Mittelbaus)**	*03/2026 - ongoing*
	• Member of the Executive Board	
Member	**FIM Nachdiplom Committee**	*10/2025 - ongoing*
Member	**Croatian Mathematical Society**	*09/2021 - ongoing*
	• Team Selection Test Committee	
	• Deputy Leader at 16^{th} Middle European Mathematical Olympiad, Switzerland, *2022*	
Member	**Society Young Gifted Mathematicians 'Marin Getaldić'**	*07/2018 - 08/2022*
	• European Mathematical Cup Jury, organizing camps and popularizing mathematics	
Junior Treasurer	**Cambridge University Croatian Society**	*09/2020 - 06/2022*
Instructor	**XVth Gymnasium Zagreb**	*09/2018 - 04/2019*
	• Preparing students from former high school for national competitions	

Awards & Competitions

University Awards

Scholarships
- Senior Scholar Award, Cambridge, *2021*
- Junior Scholar Award, Cambridge, *2019*

Studentships
- F. J. Woods Fund Studentship, Cambridge, *2020*
- CMS Summer Studentship, Cambridge, *2020*

Competitions

Mathematical Olympiads
- Bronze medal at 59^{th} International Mathematical Olympiad, Romania, *2018*
- Bronze medal at 58^{th} International Mathematical Olympiad, Brasil, *2017*
- $2\times$Gold medal at 10^{th} Middle European Mathematical Olympiad, Austria, *2016*
- Gold+Silver medal at 9^{th} Middle European Mathematical Olympiad, Slovenia, *2015*

Other International Competitions
- Silver medal at 12^{th} International Junior Science Olympiad, South Korea, *2015*
- 1^{st}, 2^{nd}, 2^{nd} place on American Computer Science League, USA, *2015, 2016, 2017*

Knowledge and Skills

Languages	**English** (fluent), **Croatian** (native), **German** (basic)
Computer skills	**C++, Python, MATLAB, Q/kdb+, Latex, GitHub**

Publications

[P = preprint, J = journal, C = conference; also available at Google Scholar]

3. [P] The Hypergraph Moore Bound. (A. S. Bandeira, D. Kunisky, PNN, L. Pesenti, R. Wang). Available online.
2. [C] Matrix Chaos Inequalities and Chaos of Combinatorial Type. (A. S. Bandeira, K. Lucca, PNN, R. van Handel). STOC 2025.
1. [J] The bunkbed conjecture holds in the $p \uparrow 1$ limit. (T. Hutchcroft, A. Kent, PNN). Combinatorics, Probability and Computing. 2023;32(3):363-369.

Other writing:

- [P] Randomstrasse101: Open Problems of 2025. (A. S. Bandeira, D. Dmitriev, K. Lucca, PNN, A. Rödder). Available online.
- [P] Exercises in Mathematics of Data Science. (A. S. Bandeira, P. A. Teixeira, K. Lucca, A. Kireeva, PNN). Available online.

Communications

[p = poster, t = talk; C = conference, S = seminar, W = workshop]

- [t,S] Seminar, Institute of Science and Technology Austria, *07/2026*
- [t,C] Foundations of Computational Mathematics 2026, Vienna, *07/2026*
- [p,W] RandNLA workshop, Lausanne, *06/2026*
- [t,C] SIAM Conference on Optimization, Edinburgh, *06/2026*
- [t,C] 57th Annual ACM Symposium on Theory of Computing, Prague, *06/2025*
- [p,W] Towards a Theory for Typical-Case Algorithmic Hardness, Les Houches, *02/2025*
- [t,S] Seminar za teoriju vjerojatnosti, PMF Zagreb, *11/2024*
- [p,C] Mathematical Aspects of Learning Theory - 20 years later, Barcelona, *09/2024*
- [p,C] Citadel Securities PhD Summit, London, *03/2024*
- [t,S] Research Seminar Noncommutative and Functional Analysis, Saarland University, *11/2023*
- [t,S] Graduate Seminar in Probability, ETH Zurich, *12/2022*
- [t,S] Summer Research Festival 2020, Cambridge, *10/2020*