

Born	2000, Zagreb, Croatia
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Webpage	https://pnizicnikolac.github.io/
Research Interests	Random Matrices, High Dimensional Probability, Statistics, Combinatorics, Optimization, Percolation

Education

PhD in Mathematics	ETH Zürich - Supervisor: Prof. Afonso Bandeira, Second advisor: Prof. Vincent Tassion - Visiting Simons Institute: Spectral Theory Beyond Graphs, 08/2026 - 12/2026	10/2022 - xy/2027
MMath (Master of Mathematics)	University of Cambridge, Trinity College Honours with Distinction	09/2021 - 06/2022
BA (Bachelor of Arts) in Mathematics	University of Cambridge, Trinity College First Class in each examination session	09/2018 - 06/2021
Mathematical grammar school	XVth Gymnasium Zagreb Best student of generation 2018	09/2014 - 06/2018

Work Experience

Doctoral Student	ETH Zürich → Teaching & Mentoring	10/2022 - xy/2027
Quant Research Intern	G-Research (London) Details omitted	06/2025 - 08/2025
Quant Software Engineer Intern	Squarepoint Capital (London) Details omitted	06/2021 - 08/2021
Summer Research Intern	University of Cambridge, Faculty of Mathematics Undergraduate research project, advised by Prof. Tom Hutchcroft (bunkbed conjecture)	06/2020 - 09/2020

Teaching & Mentoring

Teaching Assistant	Teaching: <i>Spring/2026</i>: Student Seminar on MDS: Randomized Linear Algebra (advisor) <i>Fall/2025</i>: Mathematics of Data Science (course organizer) <i>Spring/2025</i>: Mathematics of Signals, Networks, and Learning (course organizer) <i>Fall/2024</i>: Mathematics of Data Science (course organizer) <i>Spring/2024</i>: Mathematics of Signals, Networks, and Learning (course organizer) <i>Fall/2023</i>: Mathematics of Data Science <i>Spring/2023</i>: Mathematics of Signals, Networks, and Learning Seminar organization: - DACO Seminar, <i>10/2023</i> - ongoing	
Student Supervision	Master theses: - Shawn Lim, ongoing - Pavel Kliska: Improved Bounds for Matrix Probing, <i>2025</i> - Mael Macuglia: Mini-Batching Theory: Matrix Product Concentration Methods, <i>2024</i> - Xinmeng Zeng: Matrix Concentration for Products of Independent Gaussian Matrices, <i>2023</i> Bachelor theses: - Lukas Münzel: Randomized Linear Algebra with Sparse Sketching Matrices, <i>2026</i> - Stefan Hadzhistoykov: Feige's Conjecture on Hypergraphs, <i>2024</i> Semester projects: - Suei-Wen Chen, <i>2025</i>; Vlad Burca, <i>2025</i>; Nicolas Hotton, <i>2023</i>; Danielle Ludin, <i>2023</i>	

Service & Outreach

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

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 59th International Mathematical Olympiad, Romania, 2018 • Bronze medal at 58th International Mathematical Olympiad, Brasil, 2017 • 2×Gold medal at 10th Middle European Mathematical Olympiad, Austria, 2016 • Gold+Silver medal at 9th Middle European Mathematical Olympiad, Slovenia, 2015 Other International Competitions • Silver medal at 12th International Junior Science Olympiad, South Korea, 2015 • 1st, 2nd, 2nd 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](#)]

- [C] A. S. Bandeira, K. Lucca, P. Nizic-Nikolac, R. van Handel. Matrix Chaos Inequalities and Chaos of Combinatorial Type. STOC 2025.
- [J] T. Hutchcroft, A. Kent, P. Nizic-Nikolac. The bunkbed conjecture holds in the $p \uparrow 1$ limit. Combinatorics, Probability and Computing. 2023;32(3):363-369.

Other writing:

- A. S. Bandeira, D. Dmitriev, K. Lucca, P. Nizic-Nikolac, A. Rödder. Randomstrasse101: Open Problems of 2025.
- A. S. Bandeira, P. A. Teixeira, K. Lucca, A. Kireeva, P. Nizic-Nikolac, Exercises in Mathematics of Data Science.

Communications

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

- [t, C] Foundations of Computational Mathematics 2026, Vienna, 07/2026
- [p, W] RandNLA workshop, Lausanne, 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