

Nikol Savova

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EDUCATION

University of Oxford, Wadham College

MMath Mathematics (integrated master's)

Oxford, UK

Expected 2027

- Coursework: Probability, Measure & Martingales; Statistics; Graph Theory; Galois Theory; Algebraic Number Theory; Logic; Set Theory; Complex Analysis; Topology; ODEs & PDEs.
- Mini-dissertation on Fermat's Last Theorem and the attempts preceding the proof (History of Mathematics), awarded 80/100.

Sofia High School of Mathematics

Specialist mathematics school; olympiad track. GPA 6.0/6.0

Sofia, Bulgaria

2023

AWARDS & COMPETITIONS

- Emergent Ventures Fellow, Mercatus Center, George Mason University (2023) — grant awarded by Tyler Cowen.
- Bronze Medal, Bulgarian National Winter Mathematics Competition (2021).
- Bronze Medal, Bulgarian National Mathematics Tournament (2019).
- Selected to represent Bulgaria, International Young Naturalists' Tournament, physics & mathematics (2019).

RESEARCH

Einstein Institute of Mathematics

Research Assistant to Dr. Igor Balla — spectral graph theory

Sofia, Bulgaria

May–Oct 2023

- Worked on generalising the Alon–Boppana theorem from regular to arbitrary graphs: replacing the adjacency matrix with the graph Laplacian and taking the Laplacian spectral gap (Fiedler's algebraic connectivity λ_2) as the object of interest.
- Sought lower bounds on the spectral gap that remain meaningful in the dense regime, where the classical Alon–Boppana bound degenerates as the diameter collapses; related these bounds to the positive discrepancy $\text{disc}^+(G)$.
- Implemented computational searches in Python to test conjectures and construct candidate examples.

EXPERIENCE

Bloomsbury Technology

Head of Quantitative Research (pre-seed)

London, UK

Jan–Apr 2026

- Early quantitative research for a causal and behavioural investment engine for the art market: built data-scraping pipelines and led feature selection for valuation datasets.
- Ran market discovery with financial-consulting professionals to identify the company's initial target segment; studied statistical machine learning throughout.

PROJECTS

Proof Hunter — AI-assisted mathematics

Independent project — github.com/NikolSavova/proof_hunter

2026–present

- Building a pipeline for discovering open mathematics problems that are tractable, verifiable, and genuinely unsolved: ingests problems at scale from curated sources, scores them via LLM triage, checks openness against the published literature, and produces a ranked shortlist.
- Attempts shortlisted problems via model-drafted derivations cross-checked between independent models, alongside evolutionary and SAT/MILP search; every claimed result requires a verification artifact — a Lean proof, an explicit certificate, or a re-runnable evaluator.
- Supervised Machine Learning specialisation, DeepLearning.AI / Stanford (2025).

PROGRAMS & TEACHING

- Junior Counsellor (staff), ESPR 2023 and PAIR 2026 (FABRIC): selective international summer programs on rationality and AI reasoning (~30 students/cohort worldwide); covering game theory, mathematical logic, cryptography, and AI. Attendee: WARP 2022, ESPR 2022, Future Forum 2022.
- Mathematics Instructor, Easymath, Sofia (2022–2024): designed olympiad curricula and original problem sets; taught weekly classes for 70+ students.

SKILLS

Programming: Python, C++, Lean 4 (in progress), Git, $\text{\LaTeX}$

Mathematics: probability theory, stochastic processes & martingales, measure theory, statistical inference, spectral graph theory, extremal combinatorics, linear algebra, real & complex analysis

Languages: Bulgarian (native), English (fluent), German (working proficiency)