

Mateo Matijasevick

Ph.D. Candidate in Mathematics · Purdue University

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📍 West Lafayette, Indiana, USA

Profile

Mathematics Ph.D. Candidate specializing in Probabilistic Modeling, Stochastic Analysis, and High-Dimensional Statistical Inference. My research experience in Statistical Genetics centers on extracting signal from extremely noisy data, and I enjoy translating theoretical stochastic frameworks into practical, high-performance models, most recently as an AI Research Intern at Blue Wave AI Labs, working on numerical optimization and time-series anomaly detection. My foundation comes from Mathematical Olympiads, where I earned gold and silver medals at international university competitions; since 2019 I have helped select and train Colombia's national Olympiad teams.

Education

2021 – 2027 (exp.)	Ph.D. in Mathematics · <i>Purdue University</i> Research focus: Probabilistic Modeling, Stochastic Analysis, High-Dimensional Statistical Genetics, and Number Theory.
2026 – 2027 (exp.)	Graduate Certificate in Applied Statistics · <i>Purdue University</i> Coursework: Advanced Time Series Forecasting (SARIMA, volatility clustering, regime-switching models); Regression Analysis; Computational Finance.
2026	M.S. in Mathematics · <i>Purdue University</i>
2023	Certificate in Python (EBEC) · <i>Purdue University</i>
2016 – 2021	B.S. in Mathematics, with Honors · <i>Universidad Nacional de Colombia</i> Full academic scholarship; ranked #1 nationwide on the admission exam; top GPA in cohort.
2003 – 2015	High School Diploma · <i>Colegio Calasanz, Bogotá</i>

Research and Industry Experience

- Jul 2026 – present **AI Research Intern** · *Blue Wave AI Labs*
Architected numerical optimization algorithms for CoreDesigner, replacing legacy bisection methods with custom gradient-descent schemes for a $>20\times$ speedup and more robust convergence across parameter spaces. Developing physics-based 1D-CNN time-series models for nuclear anomaly detection and automated operational processing pipelines built on RAG/LLM architectures.
- Fall 2025 **Graduate Data Science Researcher** · *The Data Mine, Purdue University*
Developed and validated a logistic regression framework to predict insurance policy lapses on large-scale tabular data (over 700,000 records), in collaboration with Lincoln Financial. Feature engineering and regularization yielded an out-of-sample AUC of 0.88.
- 2024 – 2025 **Research Assistant** · *Statistical Genetics, Purdue University*
Developed probabilistic and statistical models for GWAS-based analysis of human gene trait distributions, implementing simulations and data-analysis workflows in Python. Supervisor: Dr. Fei Xue.
- Spring 2021 **UREP-C Research Scholar** · *Purdue University*
Surveyed recent progress on the Generalized Baues Conjecture under the direction of Dr. Manuel Rivera.
- Fall 2020 **Undergraduate Researcher** · *Universidad Nacional de Colombia*
Research on Combinatorial Lattice Paths and Experimental Number Theory, including computational experiments. Supervisors: R. Flórez, J. L. Ramírez, and V. Moll.
- 2018 – 2021 **Member, GICIS Research Group** · *Universidad Nacional de Colombia*
Interdisciplinary research group in Neonatology and Pediatrics.

Publications

- 4 **M. Matijasevick**, S. Rodríguez, and G. Salazar, “Perfect squares in reciprocal-sum sequences and primes that are inert in quadratic fields,” submitted, 2026. [arXiv:2610.00765](#).
- 3 **M. Matijasevick**, F. Xue, and B. Zhao, “Inferring the efficient number of true signals using high-dimensional summary-level data,” 2026.
- 2 X. Sun, H. Tang, B. Su, **M. Matijasevick**, C. Wu, F. Xue, and B. Zhao, “Statistical proof as a window into human–AI collaboration: Practical insights and a community agenda,” 2026. [arXiv:2606.23666](#).
- 1 R. Flórez, J. González, **M. Matijasevick**, C. Pardo, J. Ramírez, L. Simbaqueba, and F. Velandia, “Lattice paths in corridors and cyclic corridors,” *Contributions to Discrete Mathematics*, vol. 19, no. 2, pp. 36–55, 2024.

Technical Skills

Python	Primary language for research and data science: simulation workflows and statistical models with NumPy, pandas, and scikit-learn.
R & SQL	Statistical analysis, time-series modeling, and data manipulation.
Java	Structured application development.
Other	Mathematica (symbolic computation), $\LaTeX$ (technical writing).
Methods	Probability, Statistical Inference, Optimization, Simulation, Machine Learning, Stochastic Modeling, Time-Series Analysis (Forecasting and Volatility Modeling).
Languages	Spanish (native), English (C2), French (C1), Croatian (A2).

Teaching Experience

Purdue University — Teaching Assistant

Spring 2026	Math Resource Room Tutor · <i>Office hours for Applied Calculus I and II</i>
Fall 2025	Multivariate Calculus (<i>Indianapolis campus</i>)
Fall 2024	Advanced Mathematics for Engineers and Physicists I
Spring 2024	Advanced Mathematics for Engineers and Physicists I
Fall 2023	Linear Algebra and Differential Equations
Summer 2023	Multivariate Calculus
Spring 2023	Linear Algebra and Differential Equations
Fall 2022	Multivariate Calculus
Summer 2022	Ordinary Differential Equations
Spring 2022	Ordinary and Partial Differential Equations for Engineering
Fall 2021	Ordinary and Partial Differential Equations for Engineering

AwesomeMath — Instructor

Summer 2024	Modular Arithmetic
Summer 2023	Counting Strategies
Summer 2022	Modular Arithmetic
Summer 2021	Algebra 2.5

Universidad Nacional de Colombia — Undergraduate Teaching Assistant

Spring 2021	Fundamentals of Mathematics
Fall 2020	Tutoring in Mathematics
Spring 2020	Fundamentals of Mathematics
Fall 2019	Vector Calculus; Ordinary Differential Equations
Spring 2019	Fundamentals of Mathematics

Colegio Calasanz, Bogotá

2017 Trainer of the School Olympiad Team

Mathematical Olympiad Leadership

Universidad Antonio Nariño — Olimpiadas Colombianas de Matemáticas. Since 2019 I have helped run Colombia's national Mathematical Olympiads and prepare the national teams for international competitions, contributing to the country's best-ever results at the IMO (2021, 2026), IMC (2023), and CIIM (2025).

International Team Leadership

2026	Deputy Leader of the Colombian Team at the 67th IMO · Shanghai, China
2025	Leader of the Colombian Team at the CIIM · San José, Costa Rica
2023	Leader of the Colombian Team at the IMC · Blagoevgrad, Bulgaria
2021	Deputy Leader of the Colombian Team at the 62nd IMO · Online
2020	Deputy Leader of the Colombian Team at the CMC · Online

Competition Organization

2022 – 2026	Organizer of the Colombian Mathematical Olympiad for University Students Propose problems, write official solutions and grading rubrics, proctor and grade exams, and present awards at the closing ceremony. Top participants are selected for Colombia's international university teams.
2020 – 2021	Organizer of the Colombian Mathematical Olympiad
2019	Organizer of the Regional Mathematics Competition

National Team Training

2020 – 2023	Trainer of the Colombian Olympiad Team Instructor at the national training camps held each January and June (January 2020 and 2021; June 2020 – 2023).
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Outreach

2019 – 2020	Organizer of National Mathematics Week and National Mathematics Day
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Other Experience

Summer 2025	Expert Contributor · <i>Outlier</i> Trained and optimized advanced AI systems on complex mathematical reasoning, proofs, and algorithmic tasks.
2018	Founder, Máthēma Student Group · <i>Department of Mathematics, Universidad Nacional de Colombia</i> Founded a student group to bring together the department's mathematical community. Launched the first student seminar, talks, and math film forums; edited the department's first newspaper; offered free tutoring; and formed a team to train for Mathematical Olympiads.

Awards and Honors

International University Competitions

2021	Barcelona Mathematics Competition for University Students · <i>Bronze medal</i>
2020	IberoAmerican Mathematical Olympiad for University Students · <i>Bronze medal</i>
2020	IberoAmerican Interuniversity Mathematics Competition · <i>Silver medal</i>
2020	Barcelona Mathematics Competition for University Students · <i>Honorable mention</i>
2019	International Mathematics Competition for University Students, Bulgaria · <i>Silver medal</i>
2019	IberoAmerican Mathematical Olympiad for University Students · <i>Gold medal</i>
2018	IberoAmerican Mathematical Olympiad for University Students · <i>Bronze medal</i>

National Competitions

2021	Colombian Mathematical Olympiad for University Students · <i>Gold medal</i>
2020	Colombian Mathematical Olympiad for University Students · <i>Gold medal</i>
2020	6th National Integration Contest · <i>Runner-up</i>
2019	Colombian Mathematical Olympiad for University Students · <i>Gold medal</i>
2019	National Integration Contest · <i>Winner</i>
2015	Colombian Mathematical Olympiad · <i>Gold medal</i>
2014	Colombian Regional Mathematics Competition · <i>Winner</i>
2009	Colombian Mathematical Olympiad for Junior Students · <i>Winner</i>

Scholarships and Academic Honors

2026	Math Excellence Award · <i>Purdue University</i>
2026	Graduate Summer Research Grant · <i>Purdue University</i>
2016 – 2021	Universidad Nacional de Colombia Honors Scholarship
2015	Universidad Nacional Admission Exam · <i>First place nationwide</i>

References

José Oswaldo Lezama Serrano

Emeritus Professor, Department of Mathematics

Universidad Nacional de Colombia
National Prize of Mathematics 2017

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María Losada Falk

Director, Colombian Math Olympiads
Universidad Antonio Nariño

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Manuel Rivera

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