

BURAK AYDIN

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EDUCATION

Princeton University

Ph.D. in Operations Research and Financial Engineering (GPA: 3.95/4.00)

Princeton, NJ

Aug 2023 - Present

Advised by Ronnie Sircar. Coursework in Optimization, Probability, Stochastic Calculus, Statistics, Computational Finance, Risk Management, Asset Pricing, PDE Methods, Functional Analysis.

Bogazici University

B.S. degree in Electrical and Electronics Engineering, High Honors (GPA: 3.90/4.00)

Istanbul, Turkey

Aug 2019 - Jun 2023

Minor degree in Economics (GPA: 4.00/4.00)

Kadikoy Anadolu Lisesi

High school (lycee) diploma, Valedictorian (Class Rank: 1/333)

Istanbul, Turkey

Sep 2014 - Jun 2019

EXPERIENCE

Wells Fargo Bank, N.A.

Quantitative Researcher PhD Intern

Charlotte, NC

Jun 2025 - Aug 2025

- Member of the Rates team under Corporate & Investment Banking, Traded Products Model Development Center.
- Developed mathematical derivations and the C++ implementation for pricing of nonstandard European swaptions within the bank's fixed income repository.

Princeton University

Assistant in Instruction

Princeton, NJ

Aug 2024 - Present

- Excellence in Teaching Award for the School of Engineering and Applied Sciences, *awarded April 2026*.
- Energy and Commodities Markets, ORF 555 & ORF 455/ENE 455. (Fall 2025, Fall 2026)
- Computing and Optimization for Physical and Social Sciences, ORF 363/COS 323. (Fall 2024, Spring 2025, Spring 2026)

Bogazici University Photonics and Optical Wireless Communication Laboratory

Undergraduate Research Assistant

Istanbul, Turkey

Sep 2022 - Jun 2023

- Senior design project on Vehicle-to-Vehicle Communication. Focusing on field-of-view limitations on curvy roads, worked on hardware and software aspects for the project, used MATLAB for modeling.
- Editor's Choice Award from Photonics journal.

Max Planck Institute for Intelligent Systems

Undergraduate Research Intern at Physical Intelligence Department

Stuttgart, Germany

Jul 2022 - Sep 2022

- Utilized Python and Robot Operating System in order to construct a closed-loop controller with visual feedback, ran systematic experiments.
- Employed Machine Learning tools to achieve real-time data processing and decision making for robot motion.

SKILLS AND INTERESTS

Programming: Python, C++, MATLAB, R.

Languages: Turkish (native), English (full proficiency), Spanish (intermediate), German (intermediate), Greek (beginner).

Clubs: Carnegie Lake Rowing Association, Princeton Club Tennis.

PUBLICATIONS AND TALKS

[P] Fare Game: A Mean Field Model of Stochastic Intensity Control in Dynamic Ticket Pricing, with E. Parmaksiz and R. Sircar. *Mathematics and Financial Economics*, (doi.org/10.1007/s11579-026-00412-x) Published: 22 January 2026.

[P] Settlement Risk Analysis of Prediction Markets with Hidden Event Regimes, with R. Sircar. *Working paper, 2026*

[P] An Event-Driven Limit-Order-Book Model for a Binary Prediction Market, with M. Fabi, and R. Sircar. *Working paper, 2026*

[P] A Two-Population Mean Field Game for Dynamic Ticket Pricing with Forward-Looking Consumers. *Working paper, 2026*

[P] Nonlinear Social Learning and Cultural Evolution on Networks: A Perturbative Analysis, with R. Marjeh and T. Griffiths. *Submitted, 2026*.

[T] *10th Eastern Conference on Mathematical Finance (ECMF-10)*, Poster presentation, Johns Hopkins University, Oct 2026.

[T] *48th Annual Meeting of the Cognitive Science Society (CogSci2026)*, Poster presentation, Rio de Janeiro, Brazil, Jul 2026.

[T] *Oxford-Princeton Workshop XIV on Financial Mathematics & Stochastic Analysis*, Talk, University of Oxford, Oct 2025.

ACHIEVEMENTS, SCHOLARSHIP AND SERVICE

Princeton University Excellence in Teaching Award for the School of Engineering and Applied Sciences, *awarded April 2026*.

Turkish University Entrance Exam 2019: **6th** place in Quantitative & **1st** in English sections, among 2,528,031 test takers.

Recipient of Turkish Presidential Outstanding Success Scholarship, Bogazici University Outstanding Success Scholarship, Turkiye Is Bankasi Golden Youth Award during undergraduate education.

Department Representative, Princeton University Graduate Student Government, 2026–2027.

Graduate Student Committee Member, Operations Research and Financial Engineering Department, 2025–2026.