mlkpad14@gmail.com
michael-khalfin.github.io
University of California, Berkeley
PhD in IEOR

Michael Khalfin

EDUCATION

B.S. Operations Research, B.A. Mathematics **Aug 2022 – Dec 2026**
Rice University *Houston, TX GPA: 3.72/4.00*

Coursework: Linear & Integer Programming, Combinatorial Optimization, Large-Scale Optimization, Game Theory, Algorithms, Honors Calculus III/IV, Honors Linear Algebra, Real Analysis

Study Abroad **Jan 2024 – May 2024**
Budapest Semesters in Mathematics *Budapest, Hungary GPA: 3.85/4.00*

Coursework: Graph Theory, Advanced Combinatorics, Theory of Computation, Mathematical Logic

RESEARCH INTERESTS

Mathematical programming, online algorithms, and optimization under uncertainty

RESEARCH EXPERIENCE

Undergraduate Researcher **Sep 2024 – Present**
Rice University *Houston, TX PI: Dr. Sebastian Perez-Salazar*

- Analyzed single-reference algorithms for k-secretary problem, deriving closed-form competitive ratios for i.i.d. settings and simplifying existing proofs for adversarial settings.

NSF Research Experience for Undergraduates **May 2023 – Jul 2023**
Michigan State University *Southfield, MI PIs: Dr. Chan-Jin Chung & Dr. Joshua Siegel*

- Developed deep learning algorithms for autonomous electric vehicles using TensorFlow and OpenCV.
- Designed Internet of Things architecture connecting Linux computers to Raspberry Pi with MariaDB database for hazard data sharing.

PUBLICATIONS

In Preparation

Khalfin, M., & Perez-Salazar, S. (in preparation). Competitive ratio analysis for the IID k-secretary problem. Manuscript in preparation.

Published

Khalfin, M., Volgren, J., LeGoullon, L., Franz, B., Shah, S., Forgach, T., Jones, M., Jostes, M., Kaddis, R., Siegel, J., & Chung, C.-J. (2023). Vehicle-to-Everything Communication Using a Roadside Unit for Over-the-Horizon Object Awareness. *Proceedings of the IEOM International Conference on Smart Mobility and Vehicle Electrification*, Detroit, Michigan, USA, October 10-12, 2023. IEOM Society International. **(Oral presentation; Winner, Smart Mobility Competition.)**

Sbaiti, B., Khalfin, M., & Bezaire, M. (2021). A Computational Model of the Trans-Synaptic Spread of Pathogenic Tau in Early Alzheimer's Disease. *IMPULSE - The Premier Undergraduate Neuroscience Journal*. Published January 31, 2021.

TEACHING EXPERIENCE

TA, MATH 355: Linear Algebra, Fall 2024 Led three one-hour recitation sessions per week.

mlkpad14@gmail.com
michael-khalfin.github.io

University of California, Berkeley
PhD in IEOR

INDUSTRY EXPERIENCE

Operations Research Intern **May 2025 – Present**
Sandia National Laboratories *Albuquerque, NM*

- Formulated mathematical programs to infer system states from fragmented data and quantify parameter uncertainty.
- Implemented and benchmarked decomposition algorithms (e.g., Logical Benders, progressive hedging) in Pyomo/Gurobi.

Supply Chain Intern **Sep 2024 – Present**
National Renewable Energy Laboratory *Remote*

- Maintained database of 1,000+ North American companies in lithium-ion battery supply chain.

Area Manager Intern **Jun 2024 – Aug 2024**
Amazon *Oklahoma City, OK*

- Led Lean Six Sigma initiatives at a fulfillment center, spearheading a $5k buffer storage project that delivered over $300k in annual savings resulting (60x ROI).
- Built 1.6M sq. ft. Excel/VBA-based travel optimization map and real-time inventory tracking system, improving stock accuracy by 15% and reducing associate travel time by 8%.

HONORS AND AWARDS

President's Honor Roll, Rice University (2025)
Elizabeth D. Williams Scholarship, Budapest Semesters in Mathematics (2024)
National Merit Scholarship Finalist (2022)

TECHNICAL SKILLS

Programming: Python, C++, Java, MATLAB, Lean, Rocq
Optimization & ML: Pyomo, Gurobi, NetworkX, TensorFlow, PyTorch
Languages: English (Native), Russian (Fluent), Spanish (Conversational)