Alan Luner

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EDUCATION

Johns Hopkins University
PhD Candidate - Applied Mathematics and Statistics *Aug 2021 – Present*
Advisor: Benjamin Grimmer
GPA: 3.96

Johns Hopkins University
Master of Science in Engineering - Applied Mathematics and Statistics *Aug 2021 – May 2023*
GPA: 3.96

University of North Carolina at Chapel Hill
BS - Mathematics, BA - Chemistry *Aug 2014 – May 2018*
GPA: 3.98

RESEARCH

Mathematical programming, first-order optimization methods, computer-assisted algorithm design

- **A. Luner,** Benjamin Grimmer. "A Practical Adaptive Subgame Perfect Gradient Method" *arXiv preprint: 2510.21617* (2025).
- **A. Luner,** Benjamin Grimmer. "Performance Estimation for Smooth and Strongly Convex Sets" *arXiv preprint: 2410.14811* (2024).
- **A. Luner**, Benjamin Grimmer. "On Averaging and Extrapolation for Gradient Descent" *Mathematics of Operations Research* (2025).
- Garam Lee, **A. Luner**, Jeremy Marzuola, Daniel M. Harris. "Dispersion Control in Pressure-Driven Flow Through Bowed Rectangular Microchannels" *Microfluid Nanofluid* **25**, 34 (2021).

EXPERIENCE

MIT Lincoln Laboratory – Research Intern *May 2025 – Aug 2025*
- Developed pipeline in MATLAB for simulating radar and optic sensor observations of satellites for improved statistical orbit determination
- Performed large-scale testing via MPI parallel computing to evaluate the effect of various data quality measures, including covariance realism and sensor coverage, on resulting orbital states
- Presented technical findings to stakeholders at the Office of Space Commerce

Applied Research Lab for Intelligence & Security – Research Intern *May 2023 – Aug 2023*
- As part of the Research for Intelligence and Security Challenges (RISC) internship, developed framework for automated improvements to large-scale 3D models, specifically focused on accurate representation of buildings
- Applied various clustering and principal component analysis methods to perform surface corrections to point cloud data

Epic Systems – Integration Engineer *July 2018 – July 2021*
- Development lead for a 2000-hour project to create e-prescribing interfaces for a new electronic prescription communication framework in Norway

- Managed a five-person development group for reporting on internal data; responsible for setting timelines, determining project priority, and establishing a long-term roadmap for the group
- Developed fixes and enhancements for pharmacy and e-prescribing communication interfaces

PROGRAMMING AND SOFTWARE

Julia, Python (Scikit-learn, Pandas), MATLAB, M, R, SQL, Java, SolidWorks

AWARDS AND SCHOLARSHIPS

Rufus P. Isaacs Graduate Fellowship *Sep 2024*
Phi Beta Kappa *May 2018*

TALKS

Fall 2025 **A Practical Adaptive Subgame Perfect Gradient Method**
INFORMS Annual Meeting
Fall 2024 **Performance Estimation for Smooth and Strongly Convex Constraint Sets**
Applied Mathematics and Statistics Student Seminar, JHU
Spring 2024 **Averaging and Extrapolation for Gradient Descent (and Other Topics in Performance Estimation)**
Mathematical Institute for Data Science Student Seminar, JHU
Fall 2023 **Averaging and Extrapolation for Gradient Descent**
Applied Mathematics and Statistics Student Seminar, JHU

TEACHING

Johns Hopkins University

Spring 2025 **Teaching Assistant** 553.797 Control Theory and Optimal Control
Fall 2024 **Teaching Assistant** 553.701 Real Analysis
Spring 2024 **Teaching Assistant** 553.797 Control Theory and Optimal Control
Fall 2023 **Teaching Assistant** 553.701 Real Analysis
Fall 2022 **Teaching Assistant** 553.701 Real Analysis
Spring 2022 **Teaching Assistant** 553.600 Mathematical Modeling and Consulting
Spring 2022 **Teaching Assistant** 553.602 Research and Design in Applied Mathematics: Data Mining
Fall 2021 **Teaching Assistant** 553.636 Introduction to Data Science