CURRICULUM VITAE

Alexander S. Estes

Academic Rank

Assistant Professor in Department of Industrial and Systems Engineering

Education

Degree	Institution	Date Degree Granted
B.S. Mathematics	University of Nebraska-Lincoln	2013
Ph.D. Applied Mathematics & Statistics and Scientific Computation Advisor: Michael Ball	University of Maryland	2018

Positions/Employment

University of Minnesota, Twin Cities (2018 – present)
Assistant Professor   2020-present
IMA Industrial Postdoctoral Fellow   2018-2020

University of Maryland (2013-2018)
Graduate Research Assistant   2014-2018
Graduate Teaching Assistant   2013-2014

Current Membership in Professional Organizations
Member, INFORMS
Member, Mathematical Optimization Society

HONORS AND AWARDS

Best paper in track: network management, International Conference on Research in Air Traffic Management, 2018.

Best paper in track: performance measurement, USA/Europe Air Traffic Management R&D Seminar, 2017.

RESEARCH

Preprints and Publications under Review

Estes AS. Slow Rates of Convergence in Optimization with Side Information. Preprint available on SSRN, abstract no. 3803427.

Estes AS, Richard J-PP. Objective-Aligned Regression for Two-Stage Linear Programs. Preprint available on SSRN, abstract no. 3469897.

Refereed Journal Articles

Estes AS, Ball MO, Lovell DJ (2021). Data Exploration by Representative Region Selection: Axioms and Convergence. *Mathematics of Operations Research*. 46(3):970-1007. https://doi.org/10.1287/moor.2020.1115

Estes AS, Ball MO. (2021) Monge Properties, Optimal Greedy Policies, and Policy Improvement for the Dynamic Stochastic Transportation Problem. *INFORMS Journal on Computing*. 33(2):785-807. https://doi.org/10.1287/ijoc.2020.0990

Estes AS, Ball MO (2020) Facets of the Stochastic Network Flow Problem. *SIAM Journal on Optimization*. 30(3):2355-2378. https://doi.org/10.1137/19M1286049

Ball MO, Estes AS, Hansen M, Liu Y (2020) Quantity-Contingent Auctions and Allocation of Airport Slots. *Transportation Science*. 54(4):858-881. https://doi.org/10.1287/trsc.2020.0995

Estes AS, Ball MO (2020) Equity and Strength in Stochastic Integer Programming Models for the Dynamic Single Airport Ground-Holding Problem. *Transportation Science*. 54(4):944-955. https://doi.org/10.1287/trsc.2020.0975

Estes AS, Lovell DJ, Ball MO (2019) Unsupervised prototype reduction for data exploration and an application to air traffic management initiatives. *EURO Journal on Transportation and Logistics*. 8:467-510. https://doi.org/10.1007/s13676-018-0132-0

Estes AS, Ball MO (2017) Data-Driven Planning for Ground Delay Programs. *Transportation Research Record*. 2603(1):13-20. https://doi.org/10.3141/2603-02

Deng B, Estes AS, Grieb B, Richard D, Hinds B, Hebets E (2014) A male spider's ornamentation polymorphism maintained by opposing selection with two niches. *Journal of Theoretical Biology*. 357:103-111. https://doi.org/10.1016/j.jtbi.2014.05.001

Estes AS (2013) Discrete Calculus on Mixed Time Scales. *Panamerican Mathematical Journal*. 23(4):23-46.

Refereed Conference Proceedings

Estes AS, Ball MO (2019) Alternative resource allocation mechanisms for the Collaborative Trajectory Options Program (CTOP). Proc. 13th USA/Europe Air Traffic Management R&D Seminar, 2019, Vienna.

Estes AS, Ball MO, Lovell DJ (2018) Selecting parameters in performance-based ground delay program planning. *Proc. 8th International Conference on Research in Air Traffic*, 2018, Barcelona.

Estes AS, Ball MO, Lovell DJ (2017) Identifying representative traffic management initiatives. *Proc. 12th USA/Europe Air Traffic Management R&D Seminar*, 2017, Seattle, WA.

Estes AS, Lovell DJ (2016) Identifying representative traffic management initiatives. *Proc. 7th International Conference on Research in Air Traffic*, 2016, Philadelphia, PA.

Non-refereed Journal Articles, Essays, or Book Chapters

Estes AS. Slow Rates of Convergence in Optimization with Side Information. Preprint available on SSRN, abstract no. 3803427.

Estes AS, Richard J-PP. Objective-Aligned Regression for Two-Stage Linear Programs. Preprint available on SSRN, abstract no. 3469897.

Presentations

Contributed Presentations

Estes AS. Convergence rates in stochastic optimization with side information. INFORMS Annual Meeting. November 2020. Virtual presentation.

Estes AS, Richard J-PP. Objective-Aligned Regression for Two-Stage Linear Programs. INFORMS Annual Meeting, October 2019. Seattle, WA.

Estes AS, Ball MO. Alternative resource allocation mechanisms for the Collaborative Trajectory Options Program (CTOP). INFORMS Annual meeting, October 2019. Seattle, WA.

Estes AS, Ball MO, Hansen MM, Liu Y. A quantity-contingent auction for allocation of airport slots. INFORMS Annual meeting, October 2019. Seattle, WA.

Estes AS, Ball MO. Alternative resource allocation mechanisms for the Collaborative Trajectory Options Program (CTOP). 13th USA/Europe R&D Seminar, June 2019. Vienna, Austria.

Estes AS, Ball MO, Hansen MM, Liu Y. A quantity-contingent auction for allocation of airport slots. INFORMS Annual meeting, November 2018. Phoenix, AZ.

Estes AS, Ball MO, Lovell DJ. Predicting Performance of Traffic Management Initiatives. INFORMS Annual Meeting, October 2017. Houston, TX.

Estes AS, Ball MO. Greedy optimal policies for dynamic transportation problems. INFORMS TSL Conference, July 2017. Chicago, IL.

Estes AS, Ball MO, Lovell DJ. Predicting Performance of Traffic Management Initiatives. 12th ATM R&D Seminar, June 2017. Seattle, WA.

Estes AS, Ball MO, Hansen MM, Liu Y. A quantity-contingent auction for allocation of airport slots. INFORMS Annual meeting, November 2016. Nashville, TN.

Estes AS, Ball MO. Data-driven ground delay program planning. INFORMS Annual Meeting, November 2016. Nashville, TN.

Estes AS, Ball MO, Lovell DJ. Representative Traffic Management Initiatives. 7th International Conference on Research in Air Traffic, June 2016. Philadelphia, PA.

Estes AS, Ball MO, Lovell DJ. Representative Traffic Management Initiatives. 9th Triennial Symposium on Transportation Analysis, June 2016. Palm Beach, Aruba.

Estes AS, Ball MO, Lovell DJ. Representative Traffic Management Initiatives. INFORMS Annual Meeting, November 2015. Philadelphia, PA

Estes AS, Ball MO. An efficient stochastic integer program for the dynamic single airport ground holding problem. International Symposium on Mathematical Programming, July 2015. Pittsburgh, PA.

Estes AS, Ball MO. An efficient stochastic integer program for the dynamic single airport ground holding problem. CORS/INFORMS Joint International Meeting, June 2015. Montreal, Canada.

Estes AS, Ball MO. An efficient stochastic integer program for the dynamic single airport ground holding problem. INFORMS Computing Society Conference, January 2015. Richmond, VA.

Contributed Poster Presentations

Estes AS, Ball MO. Data-driven ground delay program planning. Transportation Research Board 96th Annual Meeting, January 2017. Washington, D.C.

Estes AS, Ball MO. An efficient stochastic integer program for the dynamic single airport ground holding problem. NEXTOR II Workshop: Global Challenges to Improve Air Navigation Performance, February 2015. Pacific Grove, CA.

TEACHING AND CURRICULUM DEVELOPMENT

University of Minnesota

IE3553/IE5553, Fall 2021
IMA Math-to-Industry Bootcamp, Optimization module, Summer 2021
Inmas, Modeling and optimization module, 2021
IE3553/IE5553, Fall 2020
IMA Math-to-Industry Bootcamp, Optimization module, Summer 2020

SERVICE AND PUBLIC ENGAGEMENT

Journal Reviewer Experience

Reviewer, Operations Research
Reviewer, Transportation Science
Reviewer, Mathematics of Operations Research
Reviewer, Service Science
Reviewer, Transportation Research Part B
Reviewer, Transportation Research Part C
Reviewer, Transportation Research Part E
Reviewer, Transportmetrica A: Transport Science
Reviewer, IEEE Transactions on Intelligent Transportation Systems
Reviewer, Journal of Air Transport Management
Reviewer, Aeronautics