

KYLE J. HUNT

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CURRENT POSITION

Assistant Professor , University at Buffalo Department of Management Science and Systems	2023-present
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EDUCATION

Ph.D. Industrial Engineering (Operations Research) University at Buffalo	2023
M.S. Industrial Engineering (Operations Research) University at Buffalo	2021
B.S. Industrial Engineering University at Buffalo	2019

RESEARCH INTERESTS

I am most interested in the implementation of operations research, game theory, and machine learning methodologies to address problems in security/defense, healthcare, and information management. I enjoy working on multidisciplinary teams that draw expertise from academia and industry.

TEACHING INTERESTS

My teaching interests lie in the fields of analytics, operations research, and information systems. While I enjoy teaching the theoretical underpinnings of these fields, I am also passionate about teaching in a practice-oriented manner in which students understand the value of the skills they learn across the business and engineering domains.

PREVIOUS POSITIONS

Clinical Assistant Professor , University at Buffalo (UB) School of Management	2022-2023
Research Fellow , UB	2021-2023
Lecturer , UB	2022
Teaching/Research Assistant , UB	2018-2022
Research/Software Engineering Intern , CUBRC, Inc.	2019

Published and Forthcoming Journal Articles

1. Steever, Z., **K. Hunt**, M. Karwan, J. Yuan, and C. Murray, “A Graph-based Approach for Relating Integer Programs,” *INFORMS Journal on Computing*, forthcoming.
2. Agarwal, P., **K. Hunt**, E. Jose, and J. Zhuang, “Shutdown and Compliance Decisions in the Face of a Viral Pandemic: A Game between Governments and Citizens,” *Decision Support Systems*, 178: 114128, 2024.
3. **Hunt, K.** and J. Zhuang, “A Review of Attacker-defender Games: Current State and Paths Forward,” *European Journal of Operational Research*, 313(2): 401-417, 2024.
4. Chen, X., Y. Dong, **K. Hunt**, and J. Zhuang, “Counterterrorism Resource Allocation during a Pandemic: The Effects of Dynamic Target Valuations when Facing a Strategic Terrorist,” *Risk Analysis*, 43(6): 1235-1253, 2023.
5. **Hunt, K.**, P. Agarwal, and J. Zhuang, “On the Adoption of New Technology to Enhance Counterterrorism Measures: An Attacker-defender Game with Risk Preferences,” *Reliability Engineering and System Safety*, 218: 108151, 2022.
6. **Hunt, K.**, A. Narayanan, and J. Zhuang, “Blockchain in Humanitarian Operations Management: A Review of Research and Practice,” *Socio-Economic Planning Sciences*, 80: 101175, 2022.
7. **Hunt, K.**, P. Agarwal, and J. Zhuang, “Monitoring Misinformation on Twitter during Crisis Events: A Machine Learning Approach,” *Risk Analysis*, 42(8), 1728-1748, 2022.
8. Wan, Q., X. Xuanhua, **K. Hunt**, and J. Zhuang, “Stay Home or Not? Modeling Individuals' Decisions during the COVID-19 Pandemic,” *Decision Analysis*, 19(4): 319-336, 2022.
9. Ding, X., X. Zhang, R. Fan, Q. Xu, **K. Hunt**, and J. Zhuang, “Rumor Recognition Behavior of Social Media Users in Emergencies,” *Journal of Management Science and Engineering*, 7(1): 36-47, 2022.
10. Xia, L., B. Chen, **K. Hunt**, J. Zhuang, and C. Song, “Food Safety Awareness and Opinions: A Social Network Analysis Approach,” *Foods*, 11(18): 2909, 2022.
11. Song, C., S. Zhou, **K. Hunt**, and J. Zhuang, “Comprehensive Evolution Analysis of Public Perceptions Related to Pediatric Care: A Sina Weibo Case Study (2013-2020),” *SAGE Open*, 12(1): 21582440221087260, 2022.
12. **Hunt, K.**, P. Agarwal, and J. Zhuang, “Technology Adoption for Airport Security: Modeling Public Disclosure and Secrecy in an Attacker-defender Game,” *Reliability Engineering and System Safety*, 207: 107355, 2021.
13. Dong, Y., X. Chen, **K. Hunt**, and J. Zhuang, “Defensive Resource Allocation: The Roles of Forecast Information and Risk Control,” *Risk Analysis*, 41(8): 1304-1322, 2021.

14. Agarwal, P., **K. Hunt**, J. Zhuang, B. Sarkar, A. Sarkar, and R. Sharma. "An Exploratory Analysis for Performance Assessment of State Police Forces in India: An Eclectic Approach," *Operational Research*, 21(2): 1125-1151, 2021.
15. **Hunt, K.**, B. Wang, and J. Zhuang, "Misinformation Debunking and Cross-Platform Information Sharing through Twitter During Hurricanes Harvey and Irma: A Case Study on Shelters and ID Checks," *Natural Hazards*, 103(1): 861-883, 2020.
16. Agarwal, P., **K. Hunt**, S. Srinivasan, and J. Zhuang, "Fire Safety Code Inspection and Compliance: A Game-theoretic Model between Fire Inspection Agencies and Building Owners," *Decision Analysis*, 17(3): 208-226, 2020.
17. Song, C., C. Guo, **K. Hunt**, and J. Zhuang, "An Analysis of Public Opinions Regarding Take-Away Food Safety: A 2015-2018 Case Study on Sina Weibo," *Foods*, 9(4): 511, 2020.

Published Book Chapters

1. **Hunt, K.** and J. Zhuang, "Blockchain for Disaster Management," In *Big Data and Blockchain for Service Operations Management*. Springer, 253-269, 2022.

Published Conference Proceedings

1. **Hunt, K.**, P. Agarwal, and J. Zhuang, "A Multi-algorithm Approach for Classifying Misinformed Twitter Data during Crisis Events," *2019 IISE Conference Proceedings*, 1-6, 2020.

Published Magazine Articles

1. **Hunt, K.**, P. Agarwal, R. Al Aziz, and J. Zhuang, "Fighting Fake News during Disasters," *OR/MS Today*, 47(1): 34-39, 2020.
2. **Hunt, K.**, P. Agarwal, and J. Zhuang, "Tracking Storms of Misinformation Spread amid Disasters," *ISE Magazine*, 51(9): 28-32, 2019.

Technical Reports

1. Zhuang, J., R. Al Aziz, and **K. Hunt**, "Identifying and Analyzing the Factors that Influence Fluctuations in Undocumented Immigration at the Southwest U.S. Border," *Department of Homeland Security (DHS) Technical Report*, 2020.
2. Zhuang, J., R. Al Aziz, and **K. Hunt**, "A Novel Data-driven Model for Quantifying the Threats and Consequences of U.S. Border Risks," *DHS Technical Report*, 2020.

Submitted Journal Articles

18. **Hunt, K.**, B. Behlendorf, S. Wang, S. Mukherjee, and J. Zhuang, "Near-repeat Terrorism: Identifying and Analyzing the Spatiotemporal Attack Patterns of Major Terrorist Organizations," minor revision submitted to *Expert Systems with Applications*.

Working Papers

1. “On the Disclosure of Defensive Posture: Adversarial Belief Formation and Target Selection Decisions” with S. Guney, J. Zhuang, and R. John. *Submission to Production and Operations Management anticipated by March 31, 2024.*
2. “Social support and user outcomes in online mental health therapy: A multi-platform study” with S. Suresh, S. Smith, and G.L. Sanders. *Submission to Journal of the Association for Information Systems anticipated by March 31, 2024.*
3. “Contextualizing Samples from Unknown Classes in Open Set Recognition Problems” with Z. Steever, C. Murray, and J. Yuan. *Submission to INFORMS Journal on Computing anticipated by April 30, 2024.*
4. “Signaling the Effectiveness of Counterterrorism Technology” with Y. Ihsan Tokel and J. Zhuang. *Submission to Naval Research Logistics anticipated by May 31, 2024.*

Works in Progress

1. “A Graph-based approach to Predicting Hospital Patients’ Length of Stay” with H. Huang, S. Wang, and M. Sohoni.
2. “Balancing Organizational Security and Innovation in the Context of Generative AI: Evidence from CISOs” with R. Singh, P. Mulgund, and S. Smith.
3. “Learning Integer Programs: An Experimental Study” with C. Murray.
4. “Technology Deployment and Information Disclosure in the Face of a Strategic Threat” with J. Zhuang.

GRANTS

Funded

1. “STTR Phase 2: Machine Learning Detection and Response for Space Force Ground Systems,” supported by the United States Air Force Research Lab; 2024-2025; with S. Lyu (lead PI) and S. Smith (co-PI); total funding: \$540,000 (Hunt’s share: ~20%).
2. “Assessing and Mitigating Risks in the Arctic (AMiRA): A Multi-Stakeholder Framework,” supported by the United States Department of Homeland Security; 2024-2026; with J. Zhuang (lead PI); total funding: \$460,000 (Hunt’s share: ~30%).
3. “DDRIG in DRMS: Multi-target Technology Deployment and Information Disclosure in Attacker-defender Settings: Analyzing Game-theoretic Prescriptions and Human Decisions,” supported by the U.S. National Science Foundation (NSF) via the Decision, Risk, and Management Sciences program; 2022-2023; with J. Zhuang (lead PI); total funding: \$15,325 (Hunt’s share: 100%).

Submitted

1. “STTR Phase 1: SafeLLM Proxy to Optimize and Secure Generative AI Integration,” submitted to the United States Air Force; with S. Smith (lead PI); proposed budget: \$34,000 (Hunt’s share: ~30%).

Not Funded

1. “Dynamic Intelligence-based Patrol Strategies,” submitted to the Department of Homeland Security; rejected in 2023; co-PIs: J. Zhuang and C. Murray; proposed budget: \$500,000.

PRESENTATIONS

1. **Speaker**, “On the Disclosure of Defensive Posture: Adversarial Belief Formation and Target Selection Decisions,” 2023 INFORMS Annual Meeting; Phoenix, AZ, October 16th, 2023.
2. **Speaker**, “From Confusion to Clarity: How Academia Helped Uncover My Purpose and Passion,” UB ISE Seminar Series; Buffalo, NY, April 14th, 2023.
3. **Speaker**, “Managing Threats: Applications of OR/MS in Security and Defense,” UB School of Management Research Seminar; Buffalo, NY, March 30th, 2023.
4. **Speaker**, “Technology Deployment and Information Disclosure in the Face of a Strategic Threat,” 2022 INFORMS Annual Meeting; Indianapolis, IN, October 18th, 2022.
5. **Co-author**, “Rumor Propagation and Clarification on Social Media During Crisis Events,” 2022 INFORMS Annual Meeting; Indianapolis, IN, October 16th, 2022.
6. **Speaker**, “Predictive Analytics and Python: An Introduction,” UB Masters in Business Analytics Orientation; Buffalo, NY, August 18th, 2022.
7. **Speaker**, “Near-repeat Terrorism: Identifying and Analyzing the Spatiotemporal Attack Patterns of Major Terrorist Organizations,” 2022 INFORMS Advances in Decision Analysis Conference; Rosslyn, VA, June 24th, 2022.
8. **Speaker**, “Models for Technology Adoption and Information Disclosure in Homeland Security,” 2022 INFORMS Advances in Decision Analysis Conference; Rosslyn, VA, June 23rd, 2022.
9. **Speaker**, “Managing Misinformation on Social Media during Disasters: Machine Learning and Game-theoretic Approaches,” 2022 INFORMS Computing Society Conference; Tampa, FL, January 24th, 2022.
10. **Speaker**, “Models for Technology Adoption and Information Disclosure in Homeland Security,” INFORMS Military and Security Society Awards Webinar; Virtual, December 16th, 2021.
11. **Speaker**, “Game Theory & Counterterrorism: Aligning Theoretical Insights with Operational Considerations,” 2021 SRA Annual Meeting; Virtual, December 7th, 2021.
12. **Speaker**, “On the Adoption of New Technology to Enhance Counterterrorism Measures: Attacker-defender Games,” 2021 INFORMS Annual Meeting; Anaheim, CA, October 26th, 2021.

13. **Speaker**, “Adopting Technology to Enhance Homeland Security: Attacker-defender Games,” United States Naval Academy Optimization and OR Conference; Virtual, June 2nd, 2021.
14. **Speaker**, “Technology Adoption for Airport Security: Attacker-defender Games,” 2020 SRA Annual Meeting; Virtual, December 17th, 2020.
15. **Speaker**, “Technology Adoption for Airport Security: Modeling Public Disclosure and Secrecy in an Attacker-defender Game,” 2020 INFORMS Annual Meeting; Virtual, November 9th, 2020.
16. **Speaker**, “Technology Adoption for Airport Security: Modeling Public Disclosure and Secrecy on Behalf of the Defender,” University of Oklahoma Research Series; Virtual, July 15th, 2020.
17. **Speaker**, “Monitoring Misinformation on Twitter during Crisis Events: A Machine Learning Approach,” 2019 SRA Annual Meeting; Arlington, VA, December 9th, 2019.
18. **Speaker**, “A Blockchain Framework to Improve Emergency Communications,” 2019 INFORMS Annual Meeting; Seattle, WA, October 23rd, 2019.
19. **Speaker**, “Tracking Misinformation on Social Media: A Machine Learning Approach,” 2019 INFORMS Annual Meeting; Seattle, WA, October 20th, 2019.
20. **Poster Presenter**, “The Spread of Misinformation on Social Media during Disasters: A Machine Learning Approach,” 2019 Conference on Risk Analysis, Decision Analysis and Security; Niagara Falls, NY, July 31st, 2019.
21. **Speaker**, “Tracking Misinformation on Twitter during Disasters: A Machine Learning Approach,” 2019 IISE Annual Conference and Expo; Orlando, FL, May 19th, 2019.
22. **Poster Presenter**, “The Spread of Misinformation on Social Media during Disasters: A Machine Learning Approach,” 2019 Celebration of Student Academic Excellence; UB, NY, April 25th, 2019.
23. **Speaker**, “Tools and Methods to Identify and Control Misinformation on Social Media,” 2018 INFORMS Annual Meeting; Phoenix, AZ, November 5th, 2018.
24. **Speaker**, “Comparative Analysis of Rumor Debunking Efforts and Cross-Platform Sourcing through Twitter During Hurricanes Harvey and Irma,” 2018 INFORMS Annual Meeting; Phoenix, AZ, November 4th, 2018.
25. **Speaker**, “Communication and Misinformation: A Comprehensive Outlook at Disaster Response on Social Media,” 2018 Technology and Cybersecurity Forum; Niagara Falls, NY, October 24th, 2018.
26. **Speaker**, “Social Media and Strategic Government-media Engagement,” Afghanistan News Executives Meeting; UB, NY, August 7th, 2018.
27. **Speaker**, “Comparative Analysis of Rumor Debunking Efforts and Cross-Platform Sourcing through Twitter During Hurricanes Harvey and Irma,” ASCE Infrastructure Resilience Division Research Forum; Reston, VA, July 13th, 2018.

28. **Poster Presenter**, “Analyzing and Modeling the Spread of Misinformation on Twitter during Natural Disasters,” 2018 Natural Hazards Workshop and Researcher’s Meeting; Denver, CO, July 8th-12th, 2018.
29. **Poster Presenter**, “Analyzing and Modeling the Spread of Misinformation on Twitter during Natural Disasters,” 2018 Celebration of Student Academic Excellence; UB, NY, April 26th, 2018.
30. **Poster Presenter**, “Analyzing and Modeling the Spread of Misinformation on Twitter,” Industrial and Systems Engineering Poster Competition; UB, NY, March 30th, 2018 (*competition winner and first undergraduate to win in department’s history*).

TEACHING EXPERIENCE

Instructor at UB (evaluations are based on “overall instructor rating”)

- **MGS 616 – Predictive Analytics** (*MS Business Analytics, MS Information Systems, MBA*)
 - Spring 2023, Section 2, 55 students, 4.8/5.0
 - Spring 2023, Section 1, 55 students, 4.8/5.0
 - Fall 2022, Section 2, 44 students, 4.9/5.0
 - Fall 2022, Section 1, 57 students, 4.9/5.0
- **MGS 614 – Systems Analysis & Design** (*MS Information Systems, MBA*)
 - Summer 2023, Section 2, 53 students, 5.0/5.0
 - Summer 2023, Section 1, 49 students, 5.0/5.0
 - Spring 2023, Section 2, 55 students, 4.9/5.0
 - Spring 2023, Section 1, 43 students, 4.8/5.0
- **IE 320 – Engineering Economy** (*BS Industrial Engineering*)
 - Summer 2022, 27 students, 4.9/5.0

HONORS AND AWARDS

Graduate Research Fellowship , NSF (\$138,000)	2021-2023
SUNY GREAT Award , The State University of New York (SUNY)	2022
Graduate Student Researcher of the Year , UB Department of Industrial and Systems Engineering (ISE)	2022
Future Faculty Fellowship , Institute of Industrial and Systems Engineers (IISE)	2021-2022
Seth Bonder Scholarship for Applied Operations Research in Military and Security Applications , Institute for Operations Research and the Management Sciences (INFORMS)	2021
Harold O. Wolf Achievement Award , UB School of Engineering and Applied Sciences (SEAS)	2021
Risk Policy and Law Merit Award , Society for Risk Analysis (SRA)	2020
Dean’s Excellence Scholarship , SEAS	2020

Dean's Achievement Award, SEAS	2019
Decision Analysis and Risk Merit Award, SRA	2019
Research and Scholarship Award of Distinction, UB	2019
Research Experience for Undergraduates Award, NSF	2018 and 2019
Undergraduate Research Award, UB	2017, 2018 and 2019
Travel Award, SRA	2019

EXTERNAL SERVICE

Ad-Hoc Reviewer – Journals: *Annals of Operations Research; Decision Analysis; Disasters; European Journal of Operational Research; Expert Systems with Applications, Information Processing and Management; Naval Research Logistics; Reliability Engineering and System Safety; Risk Analysis; Socio-Economic Planning Sciences; Technology in Society*

Ad-Hoc Reviewer – Conference Proceedings: *GameSec; ICIS; ICWSM; IISE*

Conference Track Chair: INFORMS Conference on Security (2024: homeland defense track)

Conference Session Chair: INFORMS Annual Meeting (2020, 2021, 2022); 2019 Conference on Risk Analysis, Decision Analysis and Security

Co-chair, Best Paper Award Committee	2022-2023
Data Analytics and Information Systems Division (DAIS), IISE	

Board Member	2022-2023
DAIS, IISE	

Senior Project Review Panelist	2021-2022
Westhill High School, Syracuse, NY	

Board Member, Early Career Representative	2020-2022
Risk Policy and Law Specialty Group, SRA	

Diversity, Equity, and Inclusion (DEI) Fellow	2022
Decision Analysis Society, INFORMS	

UNIVERSITY SERVICE

Co-chair, Eastern Great Lakes Analytics Conference	2023
UB School of Management	

Committee Member	
▪ Academic Integrity Hearing Board, UB	2024
▪ Assistant Professor Search (2x), UB School of Management	2023-2024
▪ Clinical Assistant Professor Search, UB School of Management	2023

- Undergraduate Grievance Pool, UB School of Management 2022-2023
- Chief Information Security Officer Search, UB 2022

DEI Training Panelist 2021
SEAS

Strategic Planning Committee Vice-chair 2018-2019
SEAS

STUDENT SUPERVISION

Supervised Research – PhD Students

1. Raghav Singh – Management Science and Systems (in progress)
2. Hongpei Huang – Management Science and Systems (in progress)
3. Sagarika Suresh – Management Science and Systems (in progress)

Supervised Research – MS Students

1. Sumit Poojary – Management Information Systems (2023; Data Analyst at Hager)
2. Nirmal Chowdhary – Management Information Systems (2023)
3. Ranjit Sreyus – Management Information Systems (2023)
4. Ashish Gangavaram – Management Information Systems (2023; Business Analyst at Altair)
5. Saif Chowdhury – Operations Research (2023; Supply Chain Analyst at Chainalytics)
6. Aditya Narayanan – Operations Research (2021; Ph.D. student at UB)

Supervised Research – Undergraduate Students

1. Steven Wang – Computer Science and Mathematics (in progress)

Supervised Industry Projects (in Collaboration with [HiddenLayer](#))

1. Mayank Mishra – M.S. Business Analytics (2023)
2. Gregory Gray – M.S. Business Analytics (2023)
3. Simon Wibler – M.S. Business Analytics (2023)
4. Akriti Chaturvedi – M.S. Business Analytics (2023)
5. Dharani Raju – M.S. Business Analytics (2023)

MEDIA MENTIONS

1. “Securing the Arctic: UB School of Management research receives multi-year grant from Department of Homeland Security,” [UBNow](#) and [UB School of Management Newsroom](#), February, 2024.
2. “[Analytics/AI conference brings new perspectives to businesses, higher education](#),” UBNow, December, 2023.
3. “[Applying game theory on the front lines](#),” TechXplore, October, 2023.
4. “[Eight UB students receive SUNY GREAT awards](#),” UBNow, February, 2022.
5. “[2022 SUNY GREAT Award Recipients](#),” SUNY, February, 2022.
6. “[Bonder and Koopman Award Presentations](#),” INFORMS Military and Security Society, January, 2022.

7. [“Our Host Interviews the 2021 Bonder Scholarship - Military Applications Winner Kyle Hunt,”](#) INFORMS, October, 2021.
8. [“Industrial engineering student wins Society for Risk Analysis Award,”](#) SEAS, February, 2021.
9. [“12 students recognized for outstanding achievements,”](#) SEAS, September, 2021.
10. [“Kyle Hunt: Capturing Big Data,”](#) Experiential Learning Network, UB, December, 2019.

PROFESSIONAL AFFILIATIONS

Member

- | | |
|--|--------------|
| ▪ INFORMS | 2018-present |
| ▪ IISE (<i>Certified Six Sigma Green Belt</i>) | 2017-present |