

PRISCILA DE AZEVEDO DRUMMOND

Boston, MA | deazedodrummond.p@northeastern.edu | +1 (956) 240-8904 | [LinkedIn](#) | [Priscila A. Drummond](#)

SUMMARY

Industrial Engineering researcher with 8+ years of experience developing optimization models and analyzing complex datasets to combat human trafficking and interpersonal violence. Published author with a history of securing partnerships with government agencies (DHS – CINA and Brazilian Public Security Department) and processing 500,000+ data records. Instructor with experience across various levels, focusing on inclusive pedagogy and active learning methodologies, with a record of assisting and mentoring over 300 students across 10+ courses.

EDUCATION

Northeastern University **Boston, MA**
Ph.D. Candidate Industrial Engineering **Expected 2026**

Dissertation: Collaborating Agents and Network Interdiction Models (Dr. Kayse Maass)

Committee Members: Dr. Shahin Shahrampour and Dr. Gabriela Gongora Svartzman

Post-secondary Teaching Certification **2025 - 2026**

University of Texas Rio Grande Valley **Edinburg, TX**
M.S. Engineering Management **2021**

Thesis: A Framework to Identify Human Trafficking at the U.S. Border (Dr. Hiram Moya)

Universidade Federal do Rio Grande do Sul **Porto Alegre, RS - Brazil**
M.S. Business Administration **2019**

Thesis: Relative Efficiency Analysis of the Women's Crisis Center Network in RS (Dr. Denise Lindstrom)

Universidade Estadual do Rio de Janeiro **Rio de Janeiro, RJ - Brazil**
M.P.S. Finance and Planning **2016**

Project: Financial and Sport Efficiency of Brazilian Soccer Teams (Dr. Francisco Pessanha)

Universidade Federal do Rio de Janeiro **Rio de Janeiro, RJ - Brazil**
B.A. in Fine Arts - Product Design **2011**

Project: Trebuchet - A Multidisciplinary Pedagogical Game (Dr. Roosevelt Telles)

RESEARCH EXPERIENCE

Operations Research and Social Justice Lab - Northeastern University **Boston, MA**
Doctoral Researcher **2021 - Present**

Accomplishments included: Cleaned and analyzed 3+ public datasets (500,000+ data items) using Python, enabling cross-disciplinary analysis that improved understanding of labor violation patterns and inspection best practices; Developed network optimization algorithms in Python to create a novel framework for targeted labor trafficking enforcement and services considering multiple stakeholders.

University of Texas Rio Grande Valley **Edinburg, TX**
Graduate Researcher **2019 – 2021**

Accomplishments included: Engineered a Bayesian optimization model that integrated cost-benefit analysis with statistical predictors, to increase the accuracy of identifying human trafficking at U.S. border checkpoints.

Universidade Federal do Rio Grande do Sul

Graduate Researcher

Porto Alegre, RS Brazil

2017 – 2019

Accomplishments included: Forged a strategic partnership with Rio Grande do Sul's Secretary of Security to optimize resource allocation in crime prevention and survivor support networks; Conducted large-scale data analysis of crime and social service metrics in 450+ cities using R and Python; Implemented Data Envelopment Analysis models that highlighted the worst and best practices that directly informed policy decisions affecting over 10 million residents.

PROFESSIONAL EXPERIENCE

COMLURB – Sanitation Company | Rio de Janeiro, Brazil

2014 – 2016

Financial Analyst

Accomplishments included:

- Successfully secured 100% budget approval at the annual Town Hall meetings, demonstrating effective communication of complex financial data to diverse stakeholder groups
- Reduced 30% on contracts and inventory by auditing and new inventory policies and organization.
- Developed analytical frameworks that informed C-suite strategic planning, translating technical analysis into actionable business insights

MRS Global – Relocation Company | Rio de Janeiro, Brazil

2012 – 2013

Financial Administrative Assistant

Accomplishments included:

- Designed and implemented automated validation protocols for financial control databases, reducing error correction workload by 67% and improving data integrity across departmental reporting
- Streamlined financial workflows using integrated systems (Excel, TOTVS ERP, Access), creating systematic approaches to complex data management challenges

Sulamérica Seguros S.A. – Insurance Company | Rio de Janeiro, Brazil

2010 – 2012

Customer Service Representative

Accomplishments included:

- Handled vehicle accident reports from clients.
- Successfully negotiated emergency services for clients with service providers.

Nano Presentes – Gifts and Crafts Shop | Rio de Janeiro, Brazil

2011 – 2012

Owner and Designer

Accomplishments included:

- Secured media coverage in national blogs and press.

Polo Nautico UFRJ – Naval Engineering | Rio de Janeiro, Brazil and Leeuwarden, Netherlands

2008

Team Leader - Naval designer and engineer team

Accomplishments included:

- Led a naval designer and engineer team to design and build a solar power boat.
- Guaranteed sponsorships within the university and within industries.
- Gained national and international media attention.

TEACHING EXPERIENCE

Graduate Teaching Assistant

2023 - Present

Northeastern University | Boston, MA

- IE 4516: Quality Assurance (Undergraduate Course)
 - o Fall 2023, Prof. Hugh McManus, Course Design
- IE 5617: Lean Concepts and Applications (Undergraduate and Graduate Course)
 - o Summer I 2023, Prof. Hugh McManus, 45 Students
 - o Summer II 2023, Prof. Andrei G. Guschin, 46 Students
 - o Summer I 2025, Prof. Hugh McManus, 20 Students

Responsibilities included: Developing new instructional materials (slides); supporting interactive exercises; maintaining office hours; support on weekly sessions; teaching one to two sections; grading homework and projects.

Selected Anonymous Students feedback (Summer 2025): Student 1: "You've been a great TA for us. You are easily approachable and patient whenever we had doubts." Student 2: "[...] even when we didn't directly ask for your help, you were helping us make a better VSM, process, or helping us look at a problem in a different way." Student 3: "Your communication is articulate and you have a natural warmth that makes us feel comfortable. It's clear that you care about teaching and helping us understand."

Graduate Teaching Assistant

2020 – 2021

University of Texas Rio Grande Valley | Edinburg, TX

- Engineering Management (Undergraduate Course):
 - o Summer 2021, Prof. Hiram Moya, 18+ students
- Manufacturing Production and Control (Undergraduate Course):
 - o Fall 2020, Prof. Hiram Moya, 18+ students
- Operations Research (Undergraduate Course):
 - o Spring 2020 Prof. Hiram Moya, 18+ students

Responsibilities included: Created and delivered targeted tutorial sessions and instructional videos during pandemic transition; Implemented personalized feedback systems, office-hours, maintaining office hours; helping with weekly recitation sessions; grading homework and projects.

Graduate Teaching Assistant

2017 – 2019

Universidade Federal do Rio Grande do Sul | Porto Alegre, Brazil

- Manufacturing Production and Control
 - o Spring 2019, Spring 2018, Fall 2017, Prof. Denise Lindstrom, 30+ students each Term

Responsibilities included: Delivered one to two research seminars and provided project feedback for industry-partnered student work; grading homework and projects.

Project Coordinator & Middle School Teacher

2006 – 2009

Universidade Federal do Rio de Janeiro | Rio de Janeiro, Brazil

- School years: 2006, 2007, 2008, 2009; 90+ students each year

Responsibilities included: Engineering, Design, and Technology Curriculum Coordinator for project-based learning model school; Managed interdisciplinary team of 10-15 interns (undergraduate students); Developed and taught practical, experiential learning methodologies integrating engineering principles with creative design for students ages 11-16 using boat design and construction; Taught classes with other 2 teaching assistants.

LEADERSHIP AND SERVICE

INFORMS Annual Meeting 2025 , <i>Cooperation and Partnership in Public Services</i> <i>Session Chair</i>	2025
Notetaking Workshop , <i>INFORMS Chapter NU</i> <i>Instructor and Organizer</i>	2024
INFORMS NU Chapter , <i>Northeastern University</i> <i>Vice President and Treasurer</i>	2022-2023; 2025
Women in STEM Programs , <i>University of Texas Rio Grande Valley</i> <i>Secretary</i>	2020-2021
Decision Science Institute Annual Meeting 2020 , <i>Border Security</i> <i>Session Chair</i>	2020
Center of Diversity and Inclusion, University of Texas Rio Grande Valley LEAP Educator	2019
AIESEC Volunteer Program , <i>Mendoza - Argentina</i> <i>Volunteer - Art Teacher</i>	2014

ACCEPTED/ PUBLISHED PEER-REVIEWED PUBLICATIONS

Published

- Jafari, A. , Bhimani, S., **Drummond, P.A.**, Nishigaya, D., Ding, A.A., Farrell, A., Maass, K.L (2024) "Enhancing Detection of Labor Violations in the Agricultural Sector: A Multilevel Generalized Linear Regression Model of H-2A Violation Counts," *PLOS One*. 19(5): e0302960. <https://doi.org/10.1371/journal.pone.0302960>.
- Drummond, P.A.**, Moya, H. (2021, April). "Optimization of Port-of-Entry Operation in the U.S.: An Anti-human Trafficking Focus," Graduate Theses and Dissertations. University of Texas Rio Grande Valley, Edinburg, TX. Available at: <https://scholarworks.utrgv.edu/etd/851/>
- Drummond, P.A.**; Moya, H. (2020) "U.S. Ports of Entry's Decision Model with an Anti-Human Trafficking Focus," *Decision Sciences Institute Proceedings*. ISSN 2471-884X.
- Drummond, P.A.**, Lindstrom, D. (2019, August). "Relative Efficiency Analysis of the Women's Crisis Center Network in RS," Graduate Theses and Dissertations. Universidade Federal do Rio Grande do Sul, Porto Alegre, RS – Brazil. Available at: <http://hdl.handle.net/10183/200636>

Manuscripts Under Review

- Jafari, A., Bhimani S **Drummond, P.A.**, Farrell, A., Maass, K.L. "Network Interdiction to Improve Labor Trafficking Detection in the U.S. Agricultural Sector," Under Review at *Decision Sciences*

WORKING PAPERS

- Drummond, P.A.**; Maass, K.L. "Collaboration in Antitrafficking Efforts: A Network Interdiction Problem"
- Drummond, P.A.**; Maass, K.L. "Scoping Review of Collaboration and Multiple Attacks in Network Interdiction Problems"
- Drummond, P.A.**; Miller, F., Maass, K.L. "Unintended Consequences in Network Interdiction Problems: An Agricultural Labor Trafficking Problem"
- Drummond, P.A.**; Maass, K.L. "Active learning Experiences: Teaching Fellowship experience in IE"

CONFERENCE PRESENTATIONS

- Drummond, P.A.**, Maass, K.L. (Accepted - 2025, October) "Collaboration in Antitrafficking Efforts: A Network Interdiction Problem,". *INFORMS Annual Meeting 2025*, Atlanta, GA.
- Drummond, P.A.**, Jafari, A., Maass, K.L. (2024, October) "Modeling Strategies to Disrupt Labor Trafficking,". *INFORMS Annual Meeting 2024*, Seattle, WA.
- Drummond, P.A.**, Jafari, A., Maass, K.L. (2023, October) "Labor Trafficking disruption with collaborating agents," *INFORMS Annual Meeting 2023*.
- Jafari, A., **Drummond, P.A.**, Bhimani, S., Farrell, A., Maass, K.L. (2023, October) "Breaking the Chains: An Innovative Network Interdiction Approach to Combat Labor Trafficking in Agricultural Supply Chains," *INFORMS Annual Meeting 2023*.
- Drummond, P.A.**, Jafari, A.; Childress, C.; Mass K.L. (2022, November) "Leveraging Public Data from Illicit Activities in Operations Research," *DSI Conference 2022*

Drummond, P.A., Maass, K.L. "International Migration and Human Trafficking Networks," (2022, October) INFORMS Annual Meeting 2022.

Jafari, A., **Drummond, P.A.**, Nishigaya, D., Bhimani, S., Farrell, A., Maass, K.L. (2022, October) "Labor violation trends in H-2A nonimmigrant agricultural workers: Improving inspection strategies for detecting labor violations." Society of Risk Analysis Annual Meeting 2022

Drummond, P.A., Moya, H. (2021, April). "Optimization of Port-of-Entry Operation in the U.S.: An Anti-human Trafficking Focus," The 5th Coastal Bend Mathematics and Statistics Conference. Texas A&M. College Station, TX. Available at: <https://sites.google.com/view/spie-utrgv>

Drummond, P.A., Moya, H. (2020, November). "U.S. ports of entry's decision model with an anti-human trafficking focus," DSI Annual Conference 2020, Dallas, TX. (virtual).

Drummond, P.A., Moya, H. (2020, November). "A Framework to Identify Human Trafficking at the U.S. Border," Annual Conference and Expo Institute of Industrial and System Engineering (IISE), New Orleans, LA. (virtual).

Drummond, P.A., Rahal, J., Amorim, F. (2008, June) "Analyses of Different Educational Strategies using Work-based Pedagogy at the Middle-school Colegio de Pescadores in Macae, RJ," 5o Congresso de Extensão da UFRJ. Rio de Janeiro, RJ Brazil.

POSTER PRESENTATIONS

Drummond, P.A., Maass, K.L.. (2024, March). "When to Collaborate? Labor Trafficking Interdiction with Multiple Agent," Poster presentation. RISE, Northeastern University. Boston, MA.

Drummond, P.A., Maass, K.L.. (2023, November). "Labor Trafficking Disruption with Collaborating Agencies," Poster presentation. MIE Research Expo, Northeastern University. Boston, MA.

Drummond, P.A., Moya, H. (2021, February). "A Decision Support Tool at the U.S. POE with a Human Trafficking Focus," Poster presentation. Engineering Week, University of Texas Rio Grande Valley, Edinburg, TX.

Drummond, P.A., Moya, H. (2020, February). "A Framework to Identify Human Trafficking at the U.S. Border," Poster presentation. Engineering Week, University of Texas Rio Grande Valley, Edinburg, TX.

Drummond, P.A., Moya, H. (2019, November). "A Framework to Identify Human Trafficking at the U.S. Border," Poster presentation. Graduate Research Fair, University of Texas Rio Grande Valley, Edinburg, TX.

SKILLS

Programming Languages and Software: Python (6+ years' experience, specialized in SciPy, Pandas, scikit-learn, NetworkX, data visualization), Minitab, and SPSS (multivariate analysis, regression modeling, data visualization).

Optimization Software: Gurobi, LINDO, AMPL (mathematical modeling and algorithm implementation).

Community Engagement: Multi-stakeholder facilitation, cross-cultural communication, survivor-centered approaches

Program Evaluation: Impact measurement, data-driven assessment, DEA modeling

Budget/Grant Management: Federal research awards (NSF, CNPQ), budget oversight

Research Methods: Mixed methods, participatory research, statistical analysis (R, Python), network optimization

Languages: Portuguese (Native), English (Fluent), Spanish (Advanced-C1)

HONORS AND AWARDS

Outstanding Graduate Teaching Award, College of Engineering, NU, 2026

Teaching Fellowship, NU, 2025

Dean Chair Fellowship, NU, 2021

Member Tau Beta Pi since 2021

Outstanding Student Award for Academic Achievement, UTRGV, 2020

Presidential Graduate Research Award, UTRGV, 2019

CNPQ Research Award, 2017