DANIEL B. LOPES DA SILVA

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EDUCATION

Ph.D., Clemson University, Industrial Engineering   2025
Dissertation: Bilevel Network Interdiction Models for Human Trafficking Disruption
Advisors: Dr. Thomas Sharkey and Dr. Yongjia Song

M.S., University of Arkansas, Industrial Engineering   2021
Advisor: Dr. Kelly Sullivan

M.S., Federal University of Pernambuco (Brazil), Industrial Engineering   2019
Advisor: Dr. Sóstenes Lins

B.S., Federal University of Alagoas (Brazil), Industrial Engineering   2017

EXPERIENCE

Clemson University

· Graduate Teacher of Record:
IE 3800 Deterministic Operations Research   Fall 2024

· Research Assistant:
Supervisors: Dr. Thomas Sharkey and Dr. Yongjia Song   Fall 2022 - Summer 2024

· Teaching Assistant:
IE 6910 Model Based System Engineering   Spring 2025
IE 8590 Capstone Design Project   Summer 2022
IE 3860 Production Planning & Control   Spring 2022
IE 4460/6460 Modeling & Analysis of Manuf. Systems   Fall 2021

University of Arkansas

· Research Assistant:
Supervisor: Dr. Kelly Sullivan   Fall 2019 - Summer 2021

REFEREED JOURNAL PAPERS

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Bilevel Network Interdiction Problem to Minimize the Number of Active Special Arcs in the Maximum Flow. INFORMS Journal on Computing, 2025.

- **Lopes da Silva, D. B.**, Sullivan, K. M. An Optimization-Based Monte Carlo Method for Estimating the Two-Terminal Survival Signature of Networks with Two Component Classes. Naval Research Logistics, 72(2):169-186, 2025.

- Chakrabarty, N., Sullivan, K. M., **Lopes da Silva, D. B.** Time-based Redeployment of Multiclass Nodes for Reliable Wireless Sensor Network Coverage. Computers & Industrial Engineering, 2024.

- **Lopes da Silva, D. B.** and Silva, G. Supply Chain Management and Performance: Proposition of a Conceptual Model. Exacta EP, 2020. (In Portuguese)

WORKING PAPERS

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y., Maass, K. L. Bi-Objective Bi-level Network Interdiction Models for Sex Trafficking Disruption (Submitted, 2025).

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Robust Network Interdiction Problem with Applications in Human Trafficking Disruption (2025).

- Sharkey, T. C., Song, Y., Maass, K. L., **Lopes da Silva, D. B.**, Ayler, T., Forliti, T., Friedman, J., Mariotti, M., Nelson, C., Voller, V., Barrick, K., Martin, L. A Framework for Modeling Effective Interventions into Sex Trafficking with Operations Research Models (2025).

OTHER PUBLICATIONS

- **Lopes da Silva, D. B.**, Mao, L. The First Southeast INFORMS Student Chapter Retreat. ORMS Tomorrow, Fall-Winter, Vol. 11, No 2, 2024.

ACADEMIC SERVICE AND LEADERSHIP

Chair of the "OR for Societal Good I" session – IISE Annual Conference 2025

INFORMS Student Chapter at Clemson University - President 2023 - 2024
Magna Cum Laude Award 2024

INFORMS Student Chapter at Clemson University - Vice-president 2022 - 2023
Magna Cum Laude Award 2023

Clemson IE K-12 Outreach Program - Coordinator 2023 - 2025
Introducing Industrial Engineering concepts to K-12 students through hands-on games and challenges

Optimality Gap 2023 - 2025
Podcast Series - INFORMS Student Chapter at Clemson University

INFORMS Student Chapter at University of Arkansas - Secretary 2020 - 2021
Cum Laude Award 2021

PET Engenharias - President from 2012-2014 2010 - 2014
Tutorial Education Program in Engineering, Federal University of Alagoas, Brazil.

Mathematics for Engineering - Instructor 2011 - 2014
Introductory mathematics course for first-year engineering students.

Science, Engineering and Technology Fair 2011 - 2013
Itinerant STEM fair in Delmiro Gouveia (Brazil) and neighboring cities.

Pre-ENEM Comunitario 2012 - 2013
Prep course for students in underprivileged communities, Delmiro Gouveia, Brazil

AWARDS & HONORS

- Student Development Award (Outstanding Research Paper), IE Dep. Clemson University   2023

- P. K. Kuroda and W. R. Thomas Endowed Fellowship, University of Arkansas   2019 - 2021

- Brazil Scientific Mobility Program scholarship (Fully Funded)   2014 - 2015
- Honorable mention, 1st Brazilian Mathematics Olympics of Public Schools   2005

ACADEMIC AND PROFESSIONAL DEVELOPMENT

- Trailblazers in Engineering Fellow (Purdue University)   2024
- IISE Future Faculty Fellow (3F) Program   2023 - 2024
- BSMP Research Experience for Undergraduates, University of Arkansas   2015
- Non-degree international student, Morgan State University   2014 - 2015
- Academic Achievement IES, Morgan State University   2014
- Trained Six Sigma Green Belt, ISE Morgan State University   2014

TRAVEL AWARDS AND GRANTS

- GSG Graduate Travel Grant, Clemson University   2024
- CECAS GSAB Supplementary Travel Award, Clemson University   2024
- Research Travel Award, IE Department Clemson University   2022, 2024

PROFESSIONAL AFFILIATION

- INFORMS   2019 - Present
- IISE   2019 - Present

PRESENTATIONS

Invited

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Robust Bi-level Network Interdiction Problem with Applications in Human Trafficking Disruption. 2025 IISE Annual Conference & Expo, Atlanta, GA, May 31 - Jun 3.

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Robust Bi-level Network Interdiction Problem with Applications in Human Trafficking Disruption. 2024 INFORMS Annual Meeting, Seattle, WA, Oct 20-23.

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y., Maass, K. L. Bi-objective Bi-level Network Interdiction Problems with Applications in Human Trafficking Disruption. 2024 IISE Annual Conference and Expo, Montreal, Canada, May 18-21.

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Human Trafficking Bi-level Network Interdiction Problem. 2023 INFORMS Annual Meeting, Phoenix, AZ, October 14-18.

- **Lopes da Silva, D. B.**, Sullivan, K. M. An Optimization-Based Monte Carlo Method for Estimating the Two-Terminal Survival Signature of Systems with Two Component Classes. 2023 INFORMS Conference on Quality, Statistics & Reliability (ICQSR), Raleigh, NC, June 6-8.

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Bilevel Network Interdiction Problem with Applications in Human-Trafficking Disruption. 2022 INFORMS Annual Meeting, Indianapolis, IN, October 16-19.

- **Lopes da Silva, D. B.**, Sullivan, K. M. Efficiently Estimating Survival Signature of Heterogeneous Two-Terminal Networks through Multi-Objective Optimization. 2022 INFORMS Conference on Security (IConS), Arlington, VA, August 29-30.

Contributed

- **Lopes da Silva, D. B.**, Sullivan, K. M. An Optimization-Based Monte Carlo Method for Estimating the Two-Terminal Survival Signature of Systems with Two Component Classes. 2023 INFORMS Conference on Quality, Statistics & Reliability (ICQSR), Raleigh, NC, June 6-8.

Other Presentations

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Bi-level Network Interdiction Problem with Applications in Human Trafficking Disruption. PhD Seminar Series, INFORMS Student Chapter at Texas Tech University, (Virtual), 2025.

- **Lopes da Silva, D. B.**, Sharkey, T. C., Song, Y. A Bi-level Network Interdiction Problem with Applications in Human Trafficking Disruption. ScholarsConnect, INFORMS OU Student Chapter, (Virtual), 2024.