

# DANIEL B. LOPES DA SILVA

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## EDUCATION

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**Clemson University**, Clemson, SC Aug 2021 - May 2025 (Expected)  
Ph.D. Candidate in Industrial Engineering GPA: 3.82  
Advisor: Dr. Thomas Sharkey and Dr. Yongjia Song  
Thesis: Modeling Efficient Disruption of Human Trafficking Networks  
President of the INFORMS Student Chapter 2023-2024  
Vice-president of the INFORMS Student Chapter (Magna Cum Laude Award 2023) 2022-2023

**University of Arkansas**, Fayetteville, AR Aug 2019 - Jul 2021  
M.S. in Industrial Engineering GPA: 3.75  
Advisor: Dr. Kelly Sullivan  
Thesis: Efficiently Estimating Survival Signature and Two-Terminal Reliability for  
Heterogeneous Networks through Multi-objective Optimization  
Secretary of the INFORMS Student Chapter (Cum Laude Award 2021) 2020-2021  
P.K. Kuroda and W.R. Thomas Endowed Fellow

**Federal University of Pernambuco**, Recife, Brazil Mar 2017 - Mar 2019  
M.S. in Industrial Engineering GPA: 3.9  
Advisor: Dr. Sstenes Lins  
Thesis: Maximum weight closure problem: mathematical aspects, algorithms, and applications

**Federal University of Alagoas**, Delmiro Gouveia, Brazil Mar 2010 - Feb 2017  
B.S. in Industrial Engineering GPA: 8.83/10  
Advisor: Dr. Glessia Silva  
Senior Design Thesis: Supply chain management and performance

**University of Arkansas**, Fayetteville, AR May 2015 - Jul 2015  
BSMP Research Experience for Undergraduates  
Advisor: Dr. Ed Pohl  
Research: Disruptive technologies' impact on the healthcare supply chain logistics

**Morgan State University**, Baltimore, MD Aug 2014 - May 2015  
Industrial and Systems Engineering, non-degree international student GPA: 3.50  
Brazilian scientific mobility program fully funded scholarship recipient  
Advisor: Dr. Massud Salimian

## EXPERIENCE

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**Clemson University** August 2021 - Present  
· Graduate Teacher of Record (IE 3800 - Deterministic Operations Research) Fall 2024  
· Research Assistant (Dr. Thomas Sharkey and Dr. Yongjia Song) Fall 2022 - Summer 2024  
· IE-8590 Capstone Design Project. Instructor: Dr. Ozgur Kabadurmus Summer 2022  
· IE-3860 Production Planning & Control. Instructor: Dr. Thomas Sharkey Spring 2022  
· IE-4460/6460 Mod & Analysis of Manuf. Systems. Instructor: Dr. Bill Ferrell Fall 2021

**University of Arkansas** August 2019 - July 2021  
*Research Assistant*

- My research with Dr. Kelly Sullivan focuses on developing efficient methods to estimate heterogeneous network reliability measures. We have developed an optimization based method to estimate the Two-Terminal Survival Signature of Networks with two classes of components and we are working towards generalizing this methodology.

#### **Federal University of Pernambuco**

Mar 2017 - Mar 2019

- Research: mathematical aspects, algorithms and applications of the maximum weight closure problem.
- Teaching: Graph theory, undergraduate level course for Computer Science and Computer Engineering students (instructor assigned grade: 10/10).

#### **FEMAC Construction Supplier**

Oct 2016 - Mar 2017

*Operations Manager*

- As the operations manager, I coordinated the opening of a new distribution center in Arapiraca, AL, BR.

#### **Federal University of Alagoas**

Dec 2010 - Jan 2014

*PET Engenharias - Tutorial Education Program for Engineering Students*

*Brazil*

- PROA Jr: mentoring freshmen students and helping them to adapt to first year in Engineering;
- Research: Simulation applied to transportation; Cleaner Production in Textile Manufacturing; Urban and Environmental Planning.
- Teaching: Mathematics for Engineering.
- Engineering & Technology Fairs and Expositions.
- Prep course for high school students.

### **AWARDS & HONORS**

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|---|-----------|
| • Student Development Award, IE Department 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, 1 <sup>st</sup> Brazilian Mathematics Olympics of Public Schools | 2005      |

### **ACADEMIC AND PROFESSIONAL DEVELOPMENT**

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|---|-----------|
| • Trailblazers in Engineering Fellow (Purdue University)    | 2024      |
| • IISE Future Faculty Fellow (3F) Program                   | 2023-2024 |
| • Academic Achievement IES, Morgan State University         | 2014      |
| • Trained Six Sigma Green Belt, ISE Morgan State University | 2014      |

### **TRAVEL AWARDS AND GRANTS**

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|---|------|
| • CECAS GSAB Supplementary Travel Award, Clemson University - (\$300) | 2024 |
| • Research Travel Award, IE Department Clemson University - (\$500)   | 2024 |
| • Research Travel Award, IE Department Clemson University - (\$500)   | 2022 |

### **PROFESSIONAL AFFILIATION**

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|-----------|----------------|
| • INFORMS | 2019 - Present |
| • IISE    | 2019 - Present |

## TECHNICAL SKILLS

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- **Programming:** C++, Python, Gurobi, R, Mathematica, MatLab, Latex.
- **Software:** ReliaSoft Weibull++, BlockSim.
- **Languages:** Portuguese (native), English (fluent), Spanish (basic).

## RELEVANT COURSEWORK AND RESEARCH AREAS

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Network Optimization & Interdiction	Linear & Integer Programming
Bi-level Programming	Network Reliability & Resiliency
Human Trafficking Disruption	Operations Research (OR) for Social Good

## REFEREED JOURNAL PAPERS

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- **Lopes da Silva, D. B.**, Sharkey, T., Song, Y. A Bi-level Network Interdiction Problem to Minimize the Number of Active Special Arcs in the Maximum Flow. (Under Review).
- **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* (Link) .
- Chakrabarty, N., Sullivan, K. M., **Lopes da Silva, D. B.** Time-based Redeployment of Multi-class Nodes for Reliable Wireless Sensor Network Coverage. (Under review)
- **Lopes da Silva, D. B.** and G. Silva. Supply Chain Management and Performance: proposition of a conceptual model. *Exacta EP*, 2020. (doi.org/10.5585/ExactaEP.v18n3.8612).

## CONFERENCE PROCEEDINGS

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- Santos, A. C. J., **D. B. Lopes da Silva**, B. R. Barros, J. A. Amorim. Contributions of cleaner production to a textile industry, in: XXXIII National Meeting of Industrial Engineering (ENEGEP). Bento Gonçalves-RS, Brazil, 2012.
- Santos, K. P., **D. B. Lopes da Silva**, B. R. Barros, J. A. Amorim. Engineering and Technology Fair: an approach to motivate young students in engineering, in: XL Brazilian Congress of Engineering Education (COBENGE). Belém-PA, Brazil, 2012.
- **Lopes da Silva, D. B.**, B. R. Barros, J. A. Amorim. Urban trees in the semi-arid region of Alagoas, in: IV Latin-American Meeting of Sustainable Edifications and Communities (ELECS). Vitória-ES, Brazil, 2011.

## PRESENTATIONS

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- **Lopes da Silva, D. B.**, Sharkey, T., Song, Y., Maass, K. 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., 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., 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.
- **Lopes da Silva, D. B.** Teaching, Research, and Academic Mobility: experiences of an IE Ph.D student abroad. Seminar for IE students from Federal University of Sao Francisco Valley, PE, Brazil, 2020.
- **Lopes da Silva, D. B.** Academic and Professional Perspectives of an IFAL alum. Seminar for students from the Federal Institute of Education, Science, and technology (IFAL), AL, Brazil 2020.