

## OBJECTIVE

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PhD student eager to contribute to advancements in Industrial Engineering, with a focus on process optimization, and automation. Seeking to integrate expertise in engineering and mathematical modeling to tackle complex problems in industrial environments.

## EDUCATION

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- 2025 - Present    Ph.D. in Industrial Engineering, **Texas Tech University (TTU)**  
• Research interests: Optimization, Mixed-Integer Programming (MIP), Graph Theory. GPA: 4.0/4.0
- 2023 - 2024       M.A. Courses in Mathematical Modeling, **Getulio Vargas Foundation (FGV)**  
• Relevant coursework: Measure Theory, Probability Theory
- 2020 - 2024       B.S. in Electronic Engineering, **Military Institute of Engineering (IME)**  
• IME is the oldest and one of the best ranked engineering schools in Brazil. GPA: 8.25/10

## PUBLICATIONS

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**Cardoso, Igor**, Gomes, Carlos, Rosa, Paulo F.F. and da Fonseca, Vinicius Prado (2024). **Comparing Pre-Trained Object Detection Models for Autonomous Grasp on Affordable Prosthetic Hands**. In: *MeMeA 2024 - IEEE Medical Measurements & Applications*.

## RESEARCH EXPERIENCE

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- Research Assistant, Texas Tech University (TTU)** 2025 – Present  
• Conducting doctoral research in Industrial Engineering, focusing on optimization, Mixed-Integer Programming (MIP), and graph theory, with ongoing work aimed at publication in leading optimization journals.  
• Advisor: Dr. Hamidreza Validi.
- Research Experience for Undergraduates at Memorial University of Newfoundland (MUN)** 2023  
• Exchange Program, BioInspired Robotics Lab. Contributed to machine learning, computer vision, and robotics, focusing on system optimization and autonomy. Developed prosthetic hand with autonomous grasping.  
• Project Advisor: Dr. Vinicius P. da Fonseca.

## HONORS & AWARDS

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- Student Chapter Annual Award (Cum Laude), INFORMS 2025
- 1st place in "The Road to 2050" competition, Shell Eco-marathon Team 2021
- 5th place in Petrobras Challenge, Latin American Robotics Competition, RoboIME 2021
- Gold Medal, Brazilian Mathematical Olympiad of Public Schools (OBMEP) 2018
- Silver Medal, Brazilian Mathematical Olympiad of Public Schools (OBMEP) 2019

## EXTRACURRICULAR EXPERIENCE

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- INFORMS Student Chapter, Texas Tech University** 2025 – Present  
• Active member engaging with the research community in Industrial Engineering.  
• Attended seminars and collaborated with peers to strengthen knowledge in optimization and operations research.
- Journal Club, Texas Tech University** 2025 – Present  
• Presenter in Journal Club sessions, discussing and analyzing peer-reviewed research in Industrial Engineering.
- American Airlines Scheduling Project** 2025  
• Developed mixed-integer programming models to optimize aircraft scheduling for American Airlines.
- Shell Eco-marathon Team** 2021 – 2023  
• Participated as a team member in the Shell Eco-marathon, focusing on sustainable engineering solutions.
- Robotics Club - RoboIME** 2021 – 2023  
• Active member of the Robotics Club at Military Institute of Engineering.  
• Contributed to projects involving machine learning and computer vision.
- Mathematics Club** 2017 – 2019  
• Engaged in mathematical problem-solving sessions and competitions in High School.

## SKILLS

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Programming	Python, C/C++, Matlab, Julia, JavaScript, HTML, CSS, FPGA
Tools	Gurobi, Cuda, Git, L <sup>A</sup> T <sub>E</sub> X, ROS, Arduino, Cloud Firestore
Languages	Portuguese (native), English (fluent), French (intermediate)
Relevant Courses	Network Optimization, Measure Theory, Probability Theory, Machine Learning, Introduction to Algorithms.

## REFERENCES

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**Dr. Hamidreza Validi (advisor)** - [hvalidi@ttu.edu](mailto:hvalidi@ttu.edu)



**Dr. Vinicius P. da Fonseca (advisor)** - [vpradodafons@mun.ca](mailto:vpradodafons@mun.ca)