



Juan P. Morande

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PROFILE

Fifth-year PhD student in Industrial and Systems Engineering with expertise in operations research, machine learning, optimization, and simulation techniques. Extensive background in solving complex, research-driven problems in logistics, supply chain, scheduling, forecasting, and related areas. Proficient in programming for analytical and computational modeling. Experienced in leading and working in teams as well as independently, with strong verbal communication skills demonstrated through multiple conference presentations and teaching experience. Seeking a role where these skills can be leveraged to address real-world challenges.

RECENT EXPERIENCE

RESEARCH AND TEACHING ASSISTANT | AUBURN UNIVERSITY | AUGUST 2021 – PRESENT

- Developed and applied optimization models and heuristics for aircraft and crew allocation and scheduling. Project: “Analytical and Simulation Modeling Framework to Support Wargaming and Strategic Planning (WASP)” AFMC through Frontier Technology Inc, 2023-25.
- Researched applications of deep learning and reinforcement learning in illicit supply chains. Project: “Anticipating Supply Chain Patterns of Opioid Precursor Trafficking Using Deep Learning,” 2024 CAOER Research Grants, Department of Homeland Security through Arizona State University, 2024-27 (terminated in April 2025 due to closure of all nine DHS S&T centers of excellence).
- Formulated and executed an optimization methodology to solve a two-dimensional vehicle loading problem with heterogeneous fleets and delay minimization based on a Colombian motorcycle assembly company case study.
- Implemented explainable AI neural network approaches (LSTM, Transformers, TFT) to predict freight rates costs in Chilean ports.
- TA in courses such as Engineering Economics, Statistical Quality Control, Data Mining, and Adaptive Optimization.

VISITING RESEARCHER | NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY | FEBRUARY 2024 – MAY 2024

- Conducted research focused on developing closed-loop supply chain MILP optimization models to evaluate strategic and product design decisions using a scenario-based case study of a Norwegian company. Published in *Omega* (2025): “Supply chain viability by integrating R-imperatives, product development, and design decisions: A stochastic programming framework” (<https://doi.org/10.1016/j.omega.2025.103317>)

EDUCATION

- PhD in Industrial and Systems Engineering | AUGUST 2021 - PRESENT | Auburn University, ALABAMA
Dissertation titled “Advanced methods for complex logistic problems”. Advisors: Alice E. Smith (Auburn University, National Academy of Engineering) and Daniel Silva (Auburn University). Expected graduation: December 2026
- Master’s in Industrial and Systems Engineering | MAY 2023 | Auburn University, ALABAMA
- Bachelor’s in Industrial Engineering | OCTOBER 2020 | UNIVERSIDAD DE LOS ANDES, CHILE
Undergraduate thesis titled “Benchmarking of Statistical Techniques and Optimization Heuristics applied to Discrete-Event Simulation” (translated). Advisors: Sergio Quijada and Rosa G. González (Universidad de los Andes).

SKILLS & ABILITIES

- MILP, Heuristic, and Stochastic Optimization
- Statistical Modelling, Experimental Design and Bayesian Statistics
- Simulation Modelling and software applications
- Machine learning and deep learning applications
- Programming (Python, R, Java, SQL)
- Native Spanish and fluent English

AWARDS & INVOLVEMENT

- Institute of Operations Research and Management Sciences (INFORMS), local chapter | Secretary: 2022-2023, Vice-president: 2023-2024, President: 2024-2025, and Vice-president 2025-present
- Amazon-Scot INFORMS scholarship 2022
- Scholarship for 2019 SPEC program on cybersecurity UVA at Wise