



Luis V. Montiel, PhD

Decision Scientist | AI & Optimization Strategy | Driving Profitability and Operational Efficiency. I design and implement advanced optimization and artificial intelligence solutions that transform analytical complexity into business decisions with measurable economic impact. I specialize in data monetization through pricing strategies, inventory optimization, and large-scale operational efficiency.

Principal Scientist – Infor / Koch Industries 2021 – 2026.

Led the design and deployment of more than 20 advanced analytics initiatives, several of which were successfully implemented in production environments, generating measurable impact across global operations.

Translated complex business challenges into optimization and machine learning solutions, delivering measurable improvements in efficiency and profitability.

Developed an optimization model for Kal Tire, a global mining services company operating across more than 500 mines. The solution optimized maintenance scheduling for mining trucks, reducing downtime by an average of 4 hours per quarter per unit. When scaled globally, this resulted in approximately 500,000 hours of recovered operational availability annually, with an estimated industry impact of nearly \$20 billion USD per year in operational efficiency gains.

Designed an inventory optimization model for First Student and State Electric, achieving a reduction of more than 25% in inventory value and an 8% decrease in operational costs related to inventory management, through intelligent warehouse rebalancing strategies.

Developed an AI-driven pricing optimization engine for EMCO (Canada), increasing margins between 6% and 12% by standardizing pricing across customers and regions. This solution later evolved into a scalable product within INFOR and was deployed across multiple clients.

Led the design of a production optimization system for Hatco (Texas), automating a highly complex planning process previously performed manually. The solution eliminated a full operational role, reduced human error, and resolved production delays of up to 2 years in backlog orders, significantly improving plant efficiency and production flow. The project was sold for USD 300,000 and approved within 24 hours following executive presentation.

Director – ITAM Strategic Decision Team Initiative 2017 – 2021.

Led an applied research group focused on advanced decision-making models, driving the development of high-level talent and generating internationally recognized research.

Under my leadership, the team published more than 7 papers in Q1 and Q2 academic journals, strengthening its position in decision science research.

Drove the development of studies related to public policy impact during the COVID-19 pandemic, including proposals to mitigate its effects. Coordinated participation in 4 international conferences (Mexico, United States, Chile, Costa Rica), presenting more than 20 research papers.

Developed high-potential talent, enabling undergraduate students to reach performance levels comparable to doctoral researchers, frequently recognized as such in international academic forums.

Associate Professor – ITAM 2015 – 2021.

Designed and delivered academic programs at undergraduate, graduate, and executive levels focused on optimization, simulation, decision-making, and project management.

Delivered 26 courses, impacting more than 520 students, and directly supervised more than 10 undergraduate theses.

Developed talent that was later admitted into top-tier universities such as Harvard, Purdue, and The University of Texas at Austin, building a strong track record in high-level talent development.

My teaching approach emphasized critical thinking, complex problem-solving, and interdisciplinary collaboration, creating a transformational impact on students' professional development.

Director, PhD Program in Finance – Tecnológico de Monterrey 2014 – 2015.

Led the academic and strategic direction of the PhD program in Finance, overseeing research development, academic structure, and program positioning in alignment with international standards.

Professional Profile.

Decision Scientist with extensive experience designing and implementing advanced solutions in Machine Learning, Optimization, and Decision Analytics, delivering direct impact on revenue, operational efficiency, and strategic decision-making.

I have led initiatives in global environments, translating complex mathematical models into tangible business outcomes across industries including mining, logistics, pricing, manufacturing, and inventory management.

My approach combines technical rigor with strategic execution to maximize economic value in large-scale organizations.

Education.

- PhD in Operations Research – The University of Texas at Austin.
- Postdoctoral Research in Decision Analysis – The University of Texas at Austin.
- Master of Science in Financial Engineering – Columbia University.
- Master of Science in Management Sciences & Engineering – Stanford University.
- Bachelor's Degree in Industrial and Systems Engineering – Tecnológico de Monterrey.

Technical Skills.

- Programming: Python, SQL, VBA, C.
- Modeling Tools: GAMS, CPLEX, Gurobi, CVX.
- Analytics Tools: R, SAS, Matlab, SPSS.
- Core Expertise: Artificial Intelligence, Machine Learning, Optimization, Decision Science.

Languages.

Spanish. | English.