Juan Lara

Computer Scientist & Mathematician

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Professional Summary

Passionate Machine Learning Specialist with a strong background in Computer Science and Mathematics from Universidad Nacional de Colombia, complemented by applied research experience at Harvard Business School. Leveraging my interdisciplinary approach, I translate theoretical insights into practical business applications through scalable predictive models, adaptive generative architectures, and end-to-end data pipeline optimization. I am committed to transforming complex data into strategic decisions that drive organizational impact.

Professional Experience

Research Assistant   Sep 2022 - Present
Harvard Business School   *Boston, USA (Remote)*

- **Integrated machine learning into research workflows**, applying advanced clustering techniques, XGBoost models, and NLP pipelines to empirically validate theoretical frameworks using extensive company datasets.
- **Collaborated closely with the Digital Reskilling Lab**, bridging quantitative research and practical business applications to generate actionable insights that guide reskilling strategies and enhance organizational decision-making.
- **Co-designed economic models of firm behavior**, developing rigorous mathematical frameworks on organizational hierarchies, exclusive contract dynamics, and technology shocks; producing proofs and simulations that form the basis of an upcoming working paper.

Supervisor: Jorge Tamayo

Data Scientist   Feb 2024 - Jan 2025
Ipsos   *Bogota, D.C., Colombia (Hybrid)*

- **Developed multi-platform applications embedding machine learning models** for segmentation tasks, leveraging geospatial data and deploying scalable solutions on Google Cloud Platform to enhance field operations efficiency.
- **Streamlined analytical workflows and reporting**, creating user-friendly tools that empowered teams to produce innovative, data-driven results with reduced manual effort, significantly improving operational decision-making and earning recognition as Total Ops Star Employee for LATAM.
- **Led the design and implementation of TextInsight** a Python library for automated multilingual text analysis using LLM and advanced network visualizations (NetworkX), enabling faster, more accurate survey insights across multiple business units in Latin America.

Supervisor: Sandra Pastrán

Education

B.S. in Computer Science

Universidad Nacional de Colombia, Bogotá D.C.
Emphasis on Machine Learning
Director: Omar Duque Gomez

Feb 2019 - Nov 2023

GPA: 4.7/5.0
Detailed List of Exams

B.S. in Mathematics

Universidad Nacional de Colombia, Bogotá D.C.
Emphasis on Applied Mathematics
Director: Omar Duque Gomez

Feb 2018 - Jun 2022

GPA: 4.7/5.0
Detailed List of Exams

Technical Skills

Core Competencies

Areas of technical expertise where I have the most depth and experience

Machine Learning Systems

End-to-end design and deployment of scalable machine learning models, including NLP pipelines and integration of LLM. Experienced in building adaptive generative architectures with high interpretability and real-time capabilities for business applications.

ML App Development

Expertise in creating responsive, interactive web applications and dashboards using Python frameworks (Streamlit, FastAPI). Strong background in designing full-stack architectures, building robust APIs, configuring CI/CD pipelines, and developing reusable components.

Mathematical Reasoning

Advanced analytical and theoretical modeling skills, specializing in abstraction, pattern generalization, and decomposition of complex organizational and strategic problems to develop scalable solutions.

Applied Data Science

Proficient in statistical analysis, predictive modeling, and data visualization. Skilled in data extraction, result interpretation, statistical validation, and automated metrics deployment to support data-driven decision-making.

Technical Proficiency

Languages, frameworks, and tools with proven experience and impact

ML & AI Frameworks

Skill		Tools
Generative AI		*OpenAI GPT, Llama, Claude*
NLP		*Transformers, BERT, NLTK*
ML Frameworks		*Scikit-learn, TensorFlow, PyTorch*

Automation & Agentic AI

Agent Frameworks — *n8n, Langchain*

Cloud — *GCP, AWS, Azure*

DevOps & Tools

Version Control — *Git, GitHub*

Deployment — *Docker, MLflow*

Visualization & Web Dev

Data Visualization — *Matplotlib, NetworkX, Leaflet*

Interactive Applications — *Streamlit, FastAPI*

Web Development — *React, Tailwind CSS*

Additional Training

AI Agents Fundamentals   February 2025
Hugging Face   *Certificate*

Credential ID: juanlara

Artificial Intelligence Expert Certificate (CAIEC)   November 2024
Certiprof   *Certificate*

Credential ID: TLZVDQTVTGG-XWHHHQPTQ-RDJFLDLRK

Artificial Intelligence Bootcamp   May-October 2024
Talento Tech Cymetria   *159 hours*

Credential ID: 2518458921

DevOps Certification   October 2024
Platzi   *Comprehensive Program*

Credential ID: cc4cfe8a-d78a-4883-8a75-ca90931151f6

Algorithmic Toolbox   2023
Coursera   *Advanced Course*

Credential ID: 8GR62BCT499V

Distinctions & Awards

Total Ops Star Employee - LATAM   April 2024
Ipsos

Recognized for developing TextInsight, demonstrating exceptional initiative, technical expertise, and commitment to operational excellence across Latin America operations.

Best Averages Scholarship   2018-2023
Universidad Nacional de Colombia

Awarded for 10 consecutive semesters to the top 15 students with highest academic performance in the program, maintaining excellence throughout entire academic career.

Research Interests

🔍 **Continual Learning & Lifelong AI**
Studying methods that allow models to learn continuously from streaming data without catastrophic forgetting, with applications in dynamic environments and evolving tasks.

🔍 **Explainable AI (XAI)**
Developing interpretable machine learning models and post-hoc explanation techniques to improve transparency, accountability, and trust in AI systems.

🔍 **AI for Systems Optimization**
Applying ML and optimization techniques to improve system-level performance in scheduling, resource allocation, and operations research.

Languages

Spanish   Native
English   Advanced