Roberto Isaac Forzán Aguirre

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Summary

Proud bioengineer with proven problem-solving skills in team environments. Guided by core values of honesty, humility, and courage. Seeking to leverage risk assessment, management and quality expertise to drive success in challenging industries. Bayesian statistician and programmer enthusiast.

Education

Tecnológico de Monterrey — Campus Estado de México
Biotechnological Engineer — *Aug 2021 — June 2025*

Courses & Specializations

Algorithms Specialization — Jul 2025 — Currently
Stanford University on Coursera

Statistical Molecular Thermodynamics — Jul 2025 — Currently
University of Minnesota on Coursera

Introduction to Logic and Critical Thinking Specialization — Feb 2025 — Currently
Duke University on Coursera

R Programming and Tidyverse Specialization — Feb 2025 — Jul 2025
University of Colorado Boulder on Coursera

Mathematics for Machine Learning Specialization — Mar 2025 — May 2025
Imperial College London on Coursera

Probabilistic Graphical Models 1: Representation — Mar 2025 — May 2025
Stanford University on Coursera

Statistical Analysis with R for Public Health Specialization — Feb 2025 — Mar 2025
Imperial College London on Coursera

Practical Time Series Analysis Course — Mar 2025 — Mar 2025
The State University of New York Boulder on Coursera

Bayesian Statistics Specialization — Jul 2024 — Feb 2025
University of California, Santa Cruz on Coursera

Diplomado en NOM-059-SSA1-2015 — Nov 2024 — Nov 2024
BIOCORE

Technical Skills

- **Programming Languages**: R, Python, Julia, Matlab, SQL
- **Softwares:** Excel, Minitab, SolidWorks, Quarto
- **English:** B2-Linguaskill Business Cambridge
- **Oratory:** Theater

Experience

Production Chain Analyst — Feb 2024 — Jul 2024
Semester Project

Defined the production chain for recombinant proteins, a key component of the future pharmaceutical industry, while identifying critical control points. Gained hands-on experience in unit operations, particularly filtration and chromatography.

Speaker — Jul 2022 — Jul 2022
Expo Ingenieras TEC

Presented the experimental design for the production of a blue pigment (indigoidine) from an engineering perspective. Essentially, I addressed the question: *"How do you manipulate a biological system to produce eco-friendly paint?"*

Lecturer Feb 2022 — Jun 2022
Social Service

Conducted an existentialism reading session for senior citizens, focusing on two key authors: Jean-Paul Sartre (his theory of shame) and Albert Camus (his famous essay *The Myth of Sisyphus*).

Experimental Design

I contributed to multiple experimental research projects for the Bioengineering Department, serving as an **experimental designer**, including:

-Organic Waste Pretreatment for Biofuel Production at Central de Abastos (https://youtu.be/jD6r-0-6dU4?si=CLLtEelImixTmQwm) Aug 2023 — Dec 2023

Identified pretreatment as the key bottleneck in bioethanol production. Developed a Bayesian probabilistic model alongside experimental work to address the issue. Null hypothesis was confirmed.

- Improvement of Chemical-Quantitative Sugar Analysis Techniques Feb 2024 — Jul 2024

Attempted (unsuccessfully) to innovate the Lane-Eynon method by enhancing sugar precision/selectivity via electrical conductivity. However, I successfully replicated a recent reinvention using a Benedict's solution spectrometer—a green chemistry approach. Project conducted independently.

- Process Optimization for Mezcal Production at Nitzuga Mezcalería (In Situ) (https://youtu.be/B8WxHloMQk4) Oct 2023 — Dec 2023

Optimized a distillation setup to reduce losses, energy consumption, and distillation time. Ultimately, the proposed system aligned with methods used in whiskey production. Key takeaway: *Many solutions already exist—innovation doesn't always require starting from scratch.*

- In Vitro Germination of Agave potatorum (In Vivo) (https://youtu.be/YbEW57PyDHc?si=OU82nxs9OkHDPAgC) Sep 2023 — Oct 2023

Led, planned, and designed a factorial experiment to increase the germination rate of a wild agave species.

Interests

Mathematical & Statistical Modeling of Industrial/Biological/Social Systems • Computational science • Logic & Probability Theory • Programming & Software Design • Extreme sports: scuba diving & skiing