Rodrigo Rivas González

Rodrivas2003@gmail.com | +33 7 58 79 25 14 | +52 56 1164 1897
Linkedin | Portfolio Github

Mechatronics Engineering | Data and Business Analytics

Professional Summary

Dual-degree Mechatronics Engineering and Data & Business Analytics student blending mechanical systems expertise with advanced analytical modeling. Skilled in MATLAB/Simulink, SolidWorks, Python, control systems, PLC automation, and machine learning. Built practical engineering solutions—including a PLC-driven pneumatic testing machine and executed full data workflows for clustering, forecasting, and optimization in a retail analytics project. Formula Student experience in chassis and structural design further strengthens my ability to design, validate, and optimize high-performance systems through technical rigor and data-driven insights.

Education

- **Rennes School of Business, France** 2025–Present
  MSc in Data & Business Analytics — Predictive Modeling, Optimization, Data Analysis, BI, MySQL, Power BI.
- **Tecnológico de Monterrey, Mexico** 2022–Present
  B.S. in Mechatronics Engineering — Robotics, Control Systems, Mechanical Design, Instrumentation, PLCs.
  Tools: MATLAB, Simulink, SolidWorks, CATIA, Siemens TIA Portal, Python, Minitab.

Engineering Experience

- **Scuderia E-Racing | Formula Student Team** 2022–2024
  Chassis, Transmission & Structural Design
  Designed lightweight structural components improving rigidity and mass efficiency. Secured MXN $15,000 in sponsorships through technical presentations using diverse sales techniques.

Key Engineering Projects

- **Pneumatic BIC 4-colors Testing Machine — Engineering Expo 2024**
  Designed an automated pneumatic testing system using actuators and control logic with Siemens PLC to evaluate pen mechanisms. Improved precision and repeatability of automated test cycles, reducing by 80% the number of false negatives and recovering pens previously flagged as non-functional.
- **Machine Learning – Prediction of Maternal Risk During Pregnancy**
  Developed a machine learning model to classify maternal health risk (low, medium, high) based on key physiological indicators, enabling early risk detection and preventive clinical decision-making.
- **Biofeedback System Using sEMG – Electromyograph Circuit**
  Designed and built a complete sEMG-based biofeedback system to capture and analyze muscle electrical activity. Developed a multi-stage signal-processing circuit (instrumentation amplifier, band-pass filters, rectifier, integrator, and gain-controlled inverter) using LM741 and TL084 op amps. Validated signal acquisition and filtering using an oscilloscope, achieving reliable real-time muscle-contraction detection.
- **Nata Supermarket Case: Customer Segmentation, Forecasting & Inventory Optimization — Data Science Project**
  Executed a full analytics pipeline: customer segmentation using K-Means, demand forecasting via Double Exponential Smoothing, and a Dynamic Lot-Sizing optimization model to reduce inventory costs and improve stock efficiency.

Entrepreneurship

Clothing & Promotional Products Business (2023–2024) — Managed production, sales, and client acquisition for a profitable consumer brand.

Technical Skills

Software: MATLAB, Simulink, SolidWorks, CATIA, Python, MySQL, Power BI, TIA Portal, Minitab, Excel, Git
Core Engineering: Mechanical Design, Control Systems, Actuator Dynamics, Predictive Modeling, Data Acquisition, PLC Automation
Languages: Spanish (Native), English (C1), French (B2)