

LUIS G. SANCHEZ SALAZAR

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Professional Summary

Automation, Controls and Equipment Engineering leader with **10+ years** across high-volume manufacturing and industrial robotics, spanning precision micro-manufacturing and large-scale stamping production. I currently own controls for a fleet of 6 fully automated press lines, 2 blanking lines, 3 trial presses, and 33 multi-brand robots at Tesla Fremont Factory. Awarded **Tesla Accelerator of the Year (2024)**. Proven track record delivering controls projects from requirements through commissioning, driving OEE improvements, and leading teams across Corning and Tesla. M.Sc. in Applied AI (2026), bridging automation and intelligent systems to lead scalable, reliable manufacturing solutions with purpose.

Work Experience

Tesla, Stamping

Sr. Controls Engineer

Controls Engineer

Fremont, CA

Apr 2023 – Present

Jan 2020 – Apr 2023

- Own equipment and controls strategy across 6 automated press lines, 2 blanking lines, 3 trial presses, and 33 multi-brand robots (FANUC, Yaskawa, KUKA, Schuler), accountable for uptime, safety, cycle time, and system reliability at production scale.
- Drive OEE and predictive maintenance using machine data: failure mode analysis, PM scheduling, monitoring logic across 60+ PLCs and SCADA systems, and permanent corrective actions. Delivered \$83,000 in annual savings on a \$1,700 investment (48× ROI), preventing a \$166K equipment loss.
- Oversee the full equipment project lifecycle, from requirements through commissioning, including vendor coordination, root-cause analysis, and change control across a 60+ PLC, multi-brand controls fleet.
- Serve as de-facto shift lead coordinating 7–10 technicians and engineers; reduced MTTR by ~20–30% through structured RCA and fault isolation. Participated in headcount planning and presented controls initiatives to 30+ engineers and senior leadership at the CEN.
- Mentor engineers and 7 maintenance technicians; established fault isolation standards adopted across the team; coached multiple team members to promotions and expanded ownership.
- **Awarded Accelerator of the Year (2024)**. *Tesla's highest honor*. For sustained impact, innovation, and leadership by example.

Corning Optical Communications

Automation Controls Engineer

Jr. Automation Controls Engineer

Controls Engineering Intern

Reynosa, Mexico

Mar 2018 – Jan 2020

Jan 2017 – Mar 2018

Jul 2016 – Dec 2016

- Led Equipment Improvement Team (6 direct reports); built the team through structured technical interviews and delivered executive-level KPI progress presentations; increased Bedrock-A throughput by 35%+.
- Reduced CAB cycle time from 35s to 20s via robot trajectory optimization; boosted line capacity.
- Updated PLC defect-handling logic; improved availability by ~5% and reduced downtime up to 70%.
- Assisted FAT/SAT for new equipment installations ensuring stable production ramp.
- Commissioned new robotic cells: decommissioned legacy equipment and established line communication.
- Contributed to centralization, standardization, control and governance implementation for controls initiatives.

Education

M.Sc. in Applied Artificial Intelligence — GPA: 4.0

Tecnologico de Monterrey

Mexico

2024 – 2026

- **Stanford Engineering** Concentration on Digital Transformation: Industry 4.0, leadership, KPI frameworks, product platforms, and global enterprise management.
- **MIT Nano Lab** (Cambridge, MA): selected attendee, nanofabrication workshop.
- Specializations: ML, deep learning, computer vision, NLP, IoT, cloud computing, Industry 4.0, and scalable manufacturing systems.

B.S. in Mechatronics Engineering — GPA: 4.0, Honors | CENEVAL National Excellence Award

Tecnologico de Monterrey

Mexico

2012 – 2016

Skills

Leadership & Management: Team leadership (direct reports and cross-functional), hiring and headcount planning, mentoring and performance development, stakeholder communication, KPI-driven delivery, agile project execution, executive-level presentations

Equipment & Automation: PLC (Rockwell, Siemens, Beckhoff, Omron; Structured Text, Ladder Logic, Function Blocks), Robotics (FANUC, KUKA, Yaskawa, Omron/SCARA), Motion Control & Drives (PowerFlex, Sinamics, Rexroth), Vision Systems (Cognex, Keyence), HMI (PanelView, WinCC), SCADA (iFix, Ignition), IoT & Predictive Maintenance, Industrial Networks (Ethernet/IP, Profinet, Profibus, DeviceNet), Simulation (MATLAB, LabVIEW), CAD (SolidWorks, CREO)

Systems & Compliance: Equipment lifecycle management, commissioning (FAT/SAT), change control, validation, failure analysis, OEE optimization, cleanroom and controlled-environment manufacturing, ISO/quality standards, 5S, continuous improvement

Problem Solving: RCA (5 Whys, Fishbone, 4D), Six Sigma (Green Belt), DOE, statistical analysis, fault isolation, data-driven decision making

AI & Data: Python, Machine Learning, Deep Learning, Computer Vision, NLP, Generative AI, PyTorch

Cloud: Azure, GCP, Docker, Kubernetes **Languages:** English (Fluent), Spanish (Native)

Awards & Recognition

Accelerator of the Year — Tesla	2024
Operations Excellence Award (OEA) ×2 — Corning	2018, 2019
National Excellence Award — CENEVAL	2016

Notable Projects

EpiForecast-MX — *Applied AI & Machine Learning* 2026
Built end-to-end AI forecasting system for public-health planning: automated data ingestion, state-level time-series models with temporal cross-validation, and 52-week probabilistic forecasts published to interactive dashboards.

Press Line Controls Upgrade — *Tesla, Fremont CA* 2025
Contributed to modernization of a 40+ year press line controls stack (PLCs, HMIs, robots, drives, motors), executing decommissioning and commissioning. Reduced recurring failures by almost 100% and improved system stability during ramp and early production.

MIT Nanofabrication Workshop — *MIT Nano Lab, Cambridge MA* 2025
One-week intensive workshop covering nanofabrication processes including solar cell fabrication, microfluidics, and MEMS.

Motoman Robots Upgrade — *Tesla, Fremont CA* 2022
Upgraded 5 Yaskawa Motoman robots on a fully automated tandem press line: decommissioned legacy equipment, set up and debugged PLC and robot code, and completed teach pendant configuration for stable production ramp.

Rocket-Launcher HMI Controls — *Tesla, Fremont CA* 2021
Designed and programmed HMI and PLC logic for a tool-changing device enabling fast, reliable troubleshooting and manual functions directly from the HMI, reducing operational downtime by over 80% and delivering \$2,500 in annual cost avoidance.

Certifications

Concentration on Digital Transformation (Certificate) — Stanford Engineering	2025
Human-Centered Design for Digital Transformation — Stanford	2025
The Industrialist's Dilemma — Stanford	2025
Generative AI with Diffusion Models — NVIDIA	2025
Build a Product Platform Strategy — Stanford	2025
Foundations for Digital Transformation — Stanford	2025
Fundamentals of Deep Learning — NVIDIA	2025
MIT Nanofabrication — MIT	2025
AI & ML Advanced Specialization — Tecnologico de Monterrey	2024
IoT & Sensor Networks Advanced Specialization — Tecnologico de Monterrey	2024
Data Science Advanced Specialization — Tecnologico de Monterrey	2024
Advanced Allen-Bradley PLC — Tesla	2020
KUKA & FANUC Robot Operation — Tesla	2020
FANUC Robot Handling Tool Programming — FANUC	2017
Green Belt Workshop — Corning	2018