LUIS GERARDO SANCHEZ SALAZAR

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Professional Summary

Controls and automation engineering leader with **10+ years** across high-volume manufacturing and industrial robotics, spanning precision micro-manufacturing and large-scale stamping production. Currently owns controls for a fleet of 6 fully automated press lines, 2 blanking lines, 3 trial presses, and 33 multi-brand robots at Tesla Fremont. **Tesla Accelerator of the Year (2024).** Proven track record delivering controls projects from requirements through commissioning, driving OEE improvements, and leading cross-functional teams. Mentored engineers and technicians to promotions and role growth; serves as de-facto shift lead in the absence of supervision. M.Sc. in Applied AI (2026). Hands-on with different PLC and robot brands; structured problem-solving and operational excellence methodologies.

Work Experience

Tesla, Stamping — *Fremont, CA*

Sr. Controls Engineer — Apr 2023 – Present

Controls Engineer — Jan 2020 – Apr 2023

- Serve as de-facto shift lead — making technical calls, prioritizing work orders, and coordinating maintenance, production, and engineering.
- Mentored technicians and engineers to promotions and role growth — coached through real problems, stepped back deliberately so others owned the outcome.
- Established troubleshooting and fault isolation standards adopted across the team; coached technicians through PLC logic, schematics, robot programming, and VFD configuration and troubleshooting.
- Participated in hiring and headcount planning; provided lateral and upward feedback that influenced role changes and team operating decisions.
- Own controls for 6 automated press lines, 2 blanking lines, 3 trial presses, and 33 multi-brand robots (FANUC, Yaskawa, KUKA, Schuler) — accountable for safety, uptime, and cycle time.
- Lead downtime recovery coordinating 7–10 technicians and engineers; reduced MTTR by ∼20–30% through structured RCA, fault isolation, and standardized troubleshooting.
- Delivered a controls improvement with a $1,700 investment generating $83,000 in annual savings (48× ROI).
- Contributed to modernization of a 40+ year press line's full controls stack (PLCs, HMIs, robots, drives, motors), executing commissioning with zero safety incidents and stable production ramp.
- Presented controls projects and improvement initiatives to the Controls Engineering Network (CEN), driving adoption of best practices across an audience of 30+ engineers, senior leadership, and the organization director.
- **Awarded Accelerator of the Year (2024).** *Tesla's highest honor.* For sustained impact, innovation, and leadership by example.

Corning Optical Communications — *Reynosa, Mexico*

Automation Controls Engineer — Mar 2018 – Jan 2020

Jr. Automation Controls Engineer — Jan 2017 – Mar 2018

Controls Engineering Intern — Jul 2016 – Dec 2016

- Led Equipment Improvement Team (6 direct reports); 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%.
- Managed 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, Honors Candidate — *Mexico*

Tecnologico de Monterrey — 2024 – 2026

- **Stanford Engineering** Concentration on Digital Transformation — Certificate of Completion (Nov 2025).
- **MIT Nano Lab** (Cambridge, MA): selected attendee, nanofabrication workshop.
- Specializations: ML, deep learning, computer vision, NLP, IoT, cloud computing.

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

Tecnologico de Monterrey — 2012 – 2016

Skills

Leadership: Cross-functional team leadership in agile environments, stakeholder alignment, strategic project delivery, change management, KPI-driven performance tracking, and team mentoring

Problem Solving: RCA (5 Whys, Fishbone, 4D), failure analysis, data-driven problem solving, hypothesis testing, continuous improvement

Automation & Controls: PLC (Rockwell, Siemens, Beckhoff, Omron), Robotics (FANUC, Yaskawa, KUKA), Motion Control & Drives, HMI, SCADA, Vision Systems, Industrial Networks, OEE, Commissioning (FAT/SAT)

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.

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