FRANCISCO SOLIS

Mechanical Engineer

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Portfolio | Bilingual in English and Spanish | full Australian work rights |

Mechanical Engineer specializing in engineering solutions for mining and industrial projects.

Proven track record of delivering measurable business value through design optimization, process improvement and construction support, using advanced tools such as FEM, DEM, CFD, macro programming, and 2D/3D modelling and detailing. Strong background in project management aligned with PMI standards, equipment maintenance, and robust integration within BIM workflows and Industry 4.0 environments.

Hands-on experience across prefeasibility, design, detailed engineering and site installation, working under BIM-driven methodologies. Fully available for immediate start in full-time, high-demand engineering roles.

WORK EXPERIENCE

01.2025 – 06.2025

EPCM Company – Lima, Peru

Project mechanical engineer

Project: Copper concentrate receiving, storage and shipping facility project at Matarani port for Zafranal mining company.

- Validated engineering calculations for material-handling systems (belt conveyors, apron feeders, chutes) and steel structures, enhancing reliability and constructability.
- Designed and implemented air extraction and injection systems to control dust emissions and improve operational safety.
- Selected mechanical equipment for material handling and dispatch zones, while preparing engineering deliverables schedules and coordinating interdisciplinary planning.

07.2024 – 01.2025

BYV IESEMIN Company – Lima, Peru

Mechanical engineer

Project: Concentrator plant expansion project to 3000 TPD, Catalina Huanca mining company.

- Developed engineering calculations for conveyors, feeders, chutes, and steel structures, ensuring accuracy and constructability.
- Designed dust control systems and selected mechanical equipment for material handling and dispatch zones.
- Coordinated engineering deliverables and interdisciplinary planning to maintain project schedule and alignment.

05.2024 – 07.2024

FREELANCE – Arequipa, Peru

Design engineer

- Optimized material-handling components (Midwest sleeve) and designed structural elements (gantry/cantilever beams) for crane systems.
- Developed specialized maintenance tools and performed structural calculations for warehouses, roofing, platforms, and ringlock scaffolding.
- Delivered 3D modeling and technical reporting for industrial operations.

12.2023 – 04.2024

BISA – Lima, Peru

Mechanical design engineer

Project: Toromocho Expansion Phase II – Chinalco mining.

- Designed and calculated tanks (API 650, compressed air) and mechanical equipment/tools for assembly.
- Performed mechanical calculations for feeders, hoppers, and conveyors, while supervising basic engineering activities.

01.2018 – 11.2023

IMCO SERVICES Company – Arequipa, Peru

Engineering supervisor

Project: Miscellaneous electromechanical works service for Cerro Verde mining company.

- Supervised platform designs, interference studies, and feasibility analyses; performed structural calculations for piping and steel installations.
- Reviewed and validated engineering plans, drawings, and installation methods; led detailed engineering of an API 650 tank.
- Coordinated multidisciplinary teams, managed engineering databases, tracked progress, and generated status reports.

Junior engineer

Project: New truck reception and its connection to the rail reception unloading chute.

- Engineered gantry cranes, industrial buildings with heavy-duty cranes, and conveyor belt systems, ensuring compliance with AISC and UBC97 codes.
- Designed chute systems for tailings, water storage tanks (1.5M gallons) and electrical rooms for transport and lifting operations.
- Conducted structural analyses for industrial facilities and mechanical systems across multiple mining projects.

TECHNICAL SKILLS

Detailing / Modeling: AutoCAD 2D-3D, NX, Inventor, Solidwork, Tekla Structures, Navisworks, Revit, Smart plant, Plant 3D.
Structural simulation: SAP2000, ANSYS, Nastran, SimSolid, Idea Statica.
Flow Simulation: EDEM flow simulation, Rocky Simulation, AFT Phatom, AFT Arrow.
Mechanical Design: Helix Conveyor, AME tank, Sidewinder.
Programming: Excel, MS Project, Visual Basic, Python, Mathcad.
International standards: AS 1692, AS 4100, AS 5131, AS 4041, API 650, ASME B31.3, AISC 360, CEMA.

EDUCATIONAL BACKGROUND

07.2021 – 05.2022 | Advanced Specialization Program in Strategic Maintenance Management
TECSUP – Lima, Peru – Top 5%

01.2020 – 07.2020 | Diploma in Steel Structure Design and Analysis
CINGCIVIL – Lima, Peru – Top 5%

03.2015 – 12.2019 | Bachelor- Mechanical engineer
Universidad Nacional de San Agustín – Arequipa, Peru – Top 5%
Thesis: Mechanical and structural design of a 420 TPH conveyor belt, including its transfer chutes verified through discrete element analysis.

ACCOMPLISHMENTS

- Ensured project investments were met by closely monitoring progress and maintaining direct client communication.
- Reduced scaffolding modelling, calculation, and valuation times, minimizing equipment downtime by developing macros.
- Reduced material search and processing time for engineering requirements through macro-based automation.
- Proposed an optimization for an industrial warehouse that led to a reduction of 50 tons in steel consumption.

SCHOLARSHIPS AND GRANTS

2017 Presidential Scholarship of the Republic of Peru. Full scholarship awarded for academic excellence (Top 5%).
2019 Research Scholarship – SERESSA 2019, Spain. 15th International School on Radiation Effects.

ADDITIONAL COURSES

2022 Diploma in ASME B31 – Piping Systems for Industrial Plants and Hydrocarbon Transport (DMIA) (Z)
2021 Scrum Fundamentals Certified (ScrumStudy) (Z)
2021 Certified Associate in Project Management (PMI) (Z)
2021 Design and Maintenance of Conveyor Belt Systems for Mineral Transport (IDC Engineering Solutions) (Z)
2020 Design and Construction of Tanks and Silos (API 650 Standard) (Z)
2020 Multiphysics Computational Simulation (Ansys Discovery) (Z)
2019 Program in Industrial Plant Systems Design (TECSUP) (Z)
2019 Diploma in Mining Management and Administration (Chamber of Commerce of Peru) (Z)
2019 Program in Safety Supervision for Industrial Environments (School of Advanced Professional Management) (Z)
2019 Structural simulation with Nastran (Autodesk) (Z)
2018 Programmable Logic Controllers- PLC (TECSUP) (Z)

PROFESSIONAL REFERENCES

- Wilson Cueto – Project engineering manager at IMCO SERVICES Company.
  wcueto@imcoperu.com
- Josue Lazo – Senior project manager at EPCM Company.
  josue.lazo@epcmperu.com
- Manuel Caipo – Data Project engineer at Bosch Rexroth.
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