Gustavo Francisco Eichhorn

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Mechanical Engineer

"Mechanical Engineer with over 15 years of experience in researching and solving complex technical challenges in the nuclear energy and space technology industries. My skills include 3D modeling, finite element simulations, and proficiency with software such as Autodesk Inventor, SolidWorks, ANSYS, Siemens NX and Femap. I also possess strong simulation skills in MATLAB, Simulink, and web application development using Python (Back-End) and HTML/CSS/JS (Front-End). I have led various projects, including instrumentation and control assembly, procurement management, and the manufacturing of composite material tubes (Filament Winding). I performed material characterizations and mechanical test of composites (carbon fiber-epoxy resin). I am focused on continuing my professional growth by contributing my experience to innovative projects and embracing new challenges."

Social Media

- Linkedin: https://www.linkedin.com/in/gustavo-francisco-eichhorn/
- Portfolio: https://gustavo-f-eichhorn.netlify.app/

Education

***Master's in Materials Science and Technology*.** Instituto Sábato. 2019-2024 (Thesis).
Mechanical Engineer. Universidad Nacional de La Plata. 2005-2012 (Final Project).

Work Experience:

Expert Mechanical Engineer.
Euler X Aerospace.
From 21/01/2025 to present.

Conducted mechanical and thermal simulations using Siemens NX. Delivered presentations on New Space technologies. Provided consulting services, including mechanical and thermal analyses using FEM.

Expert Mechanical Engineer. Head of Division of Design and Manufacturing in Composite Materials.
Comisión Nacional de Energía Atómica, Sede Constituyentes.
From 03/11/2014 to present.

Mechanical Engineer in the MGSE (Mechanical Ground Support Equipment) group for the A.R.A.S. Project (Synthetic Aperture Radar Antenna) of the SAOCOM satellite. Responsibilities included structural design and analysis in the Composite Materials Technology Department.

- Leader of the Technological Development and Special Projects Division.
- Designed over 100 3D solid models in collaboration with other teams using Autodesk Inventor, SolidWorks and Siemens NX.
- Conducted over 20 finite element simulations using ANSYS, FEMAP & Siemens NX (static and dinamic).
- Performed calculations and verifications using Matlab, Simulink & Python.
- Generated documentation, including drawings, technical specifications for procurement, service manuals, etc., for six major MGSE systems.
- Participated in equipment procurement through tenders or price competitions.
- Interacted with equipment manufacturers, including scheduled visits to workshops.
- Operated MGSEs for handling panels during their processing or preparation for transport (6 years of experience with MGSEs).
- Assembled the G-Negator system for antenna deployment testing.
- Took part in wing integration activities at CEATSA (INVAP) facilities in Bariloche, Argentina.
- Contributed to product quality assurance reports, lessons learned, and EIDPs.
- Led a team in manufacturing over 20 carbon fiber-epoxy tubes using Filament-Winding. Manufacturing sandwich panels and insert collocation.

- Authored a service inspection report for the CAREM-25 project following ASME standards, presented to the IAEA (https://lnkd.in/dF9jav5r).
- Design and drawing parts of assemblies with CAD/CAM for manufacturing (G-Code).
- 3D parts printing in a nano-medicine project.
- Directed a fellowship on finite element analysis of filament-wound pressure vessels, selecting candidates and conducting interviews.

Junior Mechanical Engineer.
Nucleoeléctrica S.A.
From 01/07/2010 to 30/10/2014.

Worked in the Instrumentation and Control department of the Atucha II Nuclear Power Plant (Central Nuclear Atucha 2). Responsibilities included transferring instrumentation and control cabinets to the commissioning sector and verifying and inspecting these systems. Managed the team responsible for assembling the refueling machine's instrumentation and participated in the assembly and inspection of instrumentation for the tilting bottle and transfer channel systems:

- Created over 20 detailed assembly plans for equipment and instruments.
- Conducted on-site inspections to prepare power and instrumentation & electric power wiring diagrams.
- Supervised personnel for assembly, wiring, and connection tasks. Coordinated activities.
- Attended plant-wide coordination meetings.
- Reviewed stock in warehouses.
- Drafted technical specifications for procurement using the SAP system.
- Transferred systems to commissioning.
- Inspected control room cabinets.
- Issued non-conformance reports.

Videos

- Using FEMAP-Siemens NX-ANSYS: https://youtube.com/shorts/j7lBzNNnkP0?feature=share
- Filament winding: https://www.youtube.com/watch?v=e4vdb0lk43c
- Incremental Cutting Method (ANSYS APDL): https://www.youtube.com/watch?v=PI_QbHYSBPg
- ASTM D2290 (Split Disk Method): https://www.youtube.com/watch?v=fVcegpJ1Xc0

Languages

- English.
- German.
- Portuguese.

Skills

- Mechanical Design (CAD): Autodesk Inventor | Solidworks | Solid edge | NX | Autocad.
- Finite Element Simulation (CAE): ANSYS | FEMAP | NX.
- Manufacturing (CAM): Solidworks | NX |.
- Computational Simulation: Matlab | Simulink | Python.
- Programming: Python | Javascript | Typescript | GIT | GITHUB.
- Web Technologies: HTML | CSS | React | NextJS | NodeJS | Express | Django | Fast API
- Automation/Robotics: Arduino | PLC Siemens.
- Databases: MySQL | PostgreSQL | MongoDB |SQLite.

Additional Training

- Monte Carlo Simulation. Dan Beninson Institute. 2024.
- Full Stack NodeJS. Codo a Codo 4.0. 2024.
- Robotics with Arduino. Educacion IT. 2024.
- Django Framework. Codo a Codo 4.0. 2023.
- MySQL. Educacion IT. 2023.
- Full Stack Python. Codo a Codo 4.0. 2022.
- Introduction to Python Programming. Coursera. 2022.
- Postgraduate Course: “Analysis and Characterization Techniques of Polymers/Biopolymers, Nanocomposites, and Derived Materials.” UBA. 2020.
- Course: "Fundamentals of CAE (Computer-Aided Engineering)”. ESSS. 2020.
- Postgraduate Course: “Composite Materials in Industry.” Universidad Nacional de Quilmes. 2018.
- Course: “Materials for CANDU-Type Reactors.” CNEA. 2016.
- Diploma in Materials for the Nuclear Industry. Instituto Sábato. 2016.