

Franco Troncoso

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Objective

Highly skilled and motivated PhD chemical engineer with expertise in sustainable process design, chemistry, and data science products development. Eager to create novel and more efficient technologies for a sustainable world.

Experience

Data Scientist/Machine Learning Engineer (INGCO, Colombia) Dec. 2021 - Currently working

Collection and handling of structured and unstructured data. Development of machine learning and deep learning algorithms, and deployment using cloud computing tools. Hyperparameter tuning. APIs. Implementation of agile methodologies for project management. Working in cross-functional teams. *Topics:* Manufacturing processing, consumer goods, supply chain, emerging technologies (CO₂ capture, wastewater), biotechnological development, and healthcare.

Achievements: More than 50 end-to-end data science products developed using big data handling and analysis based on customer preferences. The models include pattern identification, statistical inference, prediction time series, NLP, Computer vision, classification and regression algorithms.

Research Analyst (Chemical Engineering Pilot Plant, Argentina) May 2021 – Jan. 2023

Biotechnological process design and optimization. Valorization of agricultural wastes using natural enzymatic extract for self-care formulation. Experimental design and statistical analysis. Statistical inference. Regression models development

Achievements: Optimization of synthesis preparation of an enzymatic extract from a local plant. Design and optimization of process reaction conditions to valorize daily waste for amino acid production and self-care products.

Data scientist/engineer consultant (CIQAP, Ecuador) Feb. 2014 - Aug. 2020

Big data analysis. Development problem framing and strategic planning, transferring requirements into data processing tasks. Manufacturing processing consultant and simulation. API development of machine learning, deep learning and physical data models. Equipment and processing modelling. Sustainable process design and optimization. *Topics:* green chemistry, reaction systems, petrochemical, market research, power generation, industrial innovation and product formulation, among others.

Achievements: Dozens of solved problems by giving clients accurate technical engineering assistance and data solutions. From intern to senior position, leading a group of four members (engineers and data analytics). General knowledge of project management using agile methodologies.

Data Analyst (VirtualPro, Colombia) July 2015 - April 2021

Analysis of big data (product formulation, adhesive processing, sustainable projects management, business intelligence, consumer goods manufacturing, chemistry, physical engineering, petrochemical, among others). Trends and patterns identified from the analysis. Provision of actionable insights with business perspective using data visualization to non-technical audiences. Use of data analytics and visualization platforms (Tableau, Power BI). *Topics:* emerging technologies, techno-economic assessment, financial studies, market research, product formulation (even adhesive), among others.

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Achievements: Analysis of more than 60 complex problems in multiple business scenarios using data analysis and visualization. Identification of business opportunities and formulation of practical solutions.

Education

Data Analytics Professional Certificate (*Google*, online)

Jan. 2022 - Aug. 2022

Completed extensive six-month job-ready Google Career Certificate Training. Demonstrated hands-on experience with data cleaning and visualization, project management, and interpreting and communicating data analytics findings. Confidence in transforming complex data into actionable and clear insights. Fluency in computer programming languages (Python and R) and a solid understanding relational and non-relational databases.

PhD in Chemical Engineering (*National University of the South, Argentina*) **April 2015 - April 2020**

Laboratory data collection. Advanced material characterization. Experimental design and statistical analysis. Physical modelling. Techno-economical assessment. Bayesian analysis, Process intensification. Statistics inference Market research with temporal series. IoT. Continuous validation cycle with stakeholders.

Achievements: Development of two sustainable technologies for conventional processes in the oleochemical and wastewater treatment industry, resulting in seven high-impact publications with an engineering approach. The technologies were successfully tested in real scenarios.

Bachelor Degree in Chemical Engineering (*UNCPBA, Argentina*)

Mar. 2008 – Mar. 2015

Dissertation title: "Glycerin biorefinery: Design and implementation".

Technical skills

- **Chemistry:** Organic and inorganic chemistry, product formulation, advanced characterization techniques, procedure standardization, physical modelling.
- **Process Design:** Equipment design, process optimization and intensification, simulation, technical-economic assessment, Matlab, gProms, Aspen.
- **Data Science & Analytics:** SQL, Spreadsheet, Spark, Tableau, PowerBI, Python, R, SAP Software, Javascript, machine and deep learning algorithms, google analytics, physical engineering modelling, cloud computing, and IoT.

Soft Skills

- **Team Player:** Highly motivated to achieve entrepreneurial goals and collaborate with interdisciplinary teams using agile methodologies.
- **Innovative Thinker:** Passionate about exploring cutting-edge technologies and their applications in sustainable product development.
- **Customer Focus:** Committed to understanding customer needs and providing creative solutions.
- **Strong Communicator:** Able to build relationships with stakeholders and effectively convey ideas.

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Languages

- **Spanish:** Native language
- **English:** Fluent, conversational.
- **Portuguese:** Fluent, conversational.
- **Italian/French:** Basic.

Publications

- Troncoso, F.D. (2023). Artificial intelligence applied to industrial processes: Advantages and challenges. *VirtualPro*. ISSN 1900-6241.
- Troncoso, F.D., Ribeiro T., & Tonetto G.M. Novel monolithic catalysts for the hydrotreating of oleic acid, to be considered for publication in *Brazilian Journal of Chemical Engineering* (15/04/2023).
- Troncoso, F.D., & Tonetto, G.M. (2023). Economic analysis for the hydrogenation of sunflower oil using Pt monolith catalysts. *Chemical Engineering and Processing-Process Intensification*, 109273.
- Troncoso, F.D., Pedrozo, H.A., & Tonetto, G. M. (2022). Vegetable oil hydrogenation over Pt monolithic and powder catalysts: Experimental and modeling study. *Chemical Engineering & Technology*, 45(12), 2323-2333.
- Troncoso, F.D., Costilla, I.O., & Tonetto, G. M. (2022). Hydrogenation of vegetable oil using highly dispersed Pt/ γ -Al₂O₃ catalyst: Effects of key operating parameters and deactivation study. *Journal of the American Oil Chemists' Society*, 99(8), 697-710.
- Troncoso, F.D., Sánchez, D.A., Ferriera M.L. (2022). Production of plant proteases and new biotechnological applications: an updated review. *ChemistryOpen*, 11(3), e202200017.
- Troncoso, F.D., & Tonetto, G.M. (2021). Highly stable platinum monolith catalyst for the hydrogenation of vegetable oil. *Chemical Engineering and Processing-Process Intensification*, 108669.
- Troncoso, F.D., & Tonetto, G.M. (2021). Nb₂O₅ monolith as an efficient and reusable catalyst for textile wastewater treatment. *Sustainable Environment Research*, 31(1), 1-14.
- Troncoso, F.D. (2021). Optimization and control: A crucial requirement nowadays. *Virtual Pro*. ISSN 1900-6241.
- Gayo, G. X., Troncoso, F., & Lavat, A. E. (2014). Application of LnCrTeO₆ oxides as new ceramic pigments of the type "green chromium". *Ceramics International*, 40(1), 611-617.

Specific Training

- Online course: "Share Data Through the Art of Visualization". Coursera - Universidad Johns Hopkins, Sept. 2022.
- Online course: "Getting Started with AWS Machine Learning". Coursera - Amazon Web Services, Aug. 2022.
- Online course: "R Programming". Coursera - Universidad Johns Hopkins, Aug. 2022.
- Online course: "Data Analysis with R Programming". Coursera – Google, July 2022.
- Online course: "The Data Scientist's Toolbox". Coursera - Universidad Johns Hopkins, June. 2022.
- Online course: "Machine learning with Python". Freecodecamp, June. 2022.
- Online course: "Data analysis with Python". Freecodecamp, May. 2022.

Hobbies & Interests

- Research trending topics and new technologies.
- Divergent thinking applied to the conventional process to propose improvements.
- Discuss ideas and alternative solutions.
- Attending forums and technological presentations.