

# Martín Achondo Mercado

Graduate in Mechanical Engineering

## Summary

Graduate in Mechanical Engineering, currently pursuing a Master's degree in Mechanical Engineering Sciences.

Conducting research in the development of deep neural networks for computational modeling, applying this investigation to model the electrostatic potential for macromolecular interactions in polarizable solvent. Currently working as a Consulting Engineer providing engineering services to Oxiquim S.A. and Engiplus SpA.

Self-taught in application development.

Highly adaptable to team environments. Strong motivation for research and continuous learning.

## Contact Info.

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[Martín Achondo Mercado](#)

[@MartinAchondo](#)

Concón, Chile

## Languages

- Spanish - Native
- English - Advanced

## Softwares

OpenFOAM Ansys Inventor AutoCAD  
AFT Fathom DWSIM ALOHA Excel Git

## Programming Languages

Python Matlab VBA JavaScript Fortran  
C++ SQL PLC

## Other Interests

- Football, Padel, Tennis.
- Craft beer brewing.
- Welding.

## Education

2023-  
Present

### Master of Science in Mechanical Engineering

*Universidad Técnica Federico Santa María*

Investigating the development of deep neural networks for macromolecular electrostatics modeling. Awarded ANID Master's Scholarship.

2018-  
Present

### Mechanical Engineering

*Universidad Técnica Federico Santa María*

Received the Academic Excellence Award in 2020, 2021, and 2022. Awarded an Admission Scholarship in 2018.

2004-2017

### Alumnus

*The Mackay School*

Attainment of the Bilingual IB Diploma with Distinction.

## Experience

2023-  
Present

### Graduate Researcher

*Universidad Técnica Federico Santa María*

Currently conducting research on "Solving the Poisson-Boltzmann Equation for Macromolecules in Polarizable Media Using (XPINNs) Extended Physics Informed Neural Networks" as part of my master's degree program. Significant progress has been made with potential publishable results that have an impact on both the field of PINNs and computational chemistry. This advancement represents a substantial stride in utilizing machine learning for enhancing numerical simulations of macromolecular electrostatics.

2023-  
Present

### Consulting Engineer (Mechanical - Processes)

*Oxiquim S.A. - Engiplus SpA*

Working as an Engineering Consultant providing engineering services to Oxiquim S.A. at their maritime terminals and production plants, as well as to Engiplus SpA. in industrial projects. I have conducted feasibility studies, technology research, calculation reports, efficiency studies, operation manuals, among others. Some notable projects I have been involved in include a new CO2 capture plant project from exhaust gases, the construction of a VRU Plant for gasoline vapor recovery, and the implementation of an RTO Plant for the combustion of chemical vapors.

2023

### Professional Internship

*Oxiquim S.A.*

I completed my professional internship in the Engineering Department of Terminal Marítimo Quintero. My primary focus was on two key projects: the VRU Plant and the RPU unit of the LPG tank. Throughout my internship, I conducted studies and calculation reports related to mechanical design and chemical processes.

2020-2021

### Application Developer

*Independent*

I have developed several applications related to inventory management, dispatch management, customer loyalty, and process automation, all integrated with databases. These applications have been specifically tailored for use in retail stores.

2018-2022

### Academic Assistant and Private Tutor

*UTFSM & Independent*

I have served as a teaching assistant and private tutor in subjects such as Physics, Mathematics, and Chemistry, as well as courses within my field of study, including Thermodynamics, Fluid Mechanics, Heat Transfer and Mechanics of Materials.