Daniel Iglesias

████████████████████ █████████ | [LinkedIn](#)

EDUCATION

UNIVERSIDAD DE LA FRONTERA

MSc. in Engineering
Mar 2023 to Mar 2025
Temuco, Chile
GPA: 6.8 / 7.0

UNIVERSIDAD DE LA FRONTERA

Electronics Engineering
Mar 2019 to Aug 2024
Temuco, Chile
GPA: 6.8 / 7.0

LINKS

Github:// **iglesias-daniel**
LinkedIn:// **d-iglesias**
ORCID:// **0009-0005-8455-1727**

COURSEWORK

GRADUATE

Artificial Intelligence
Theory of Information
Research Methodology
Data Analysis and Experimental
Design in Engineering

UNDERGRADUATE

Digital Electronics
Electronic Circuits I/II
Digital Signal Processing
Communication Systems
Semiconductor Devices
Computer Architecture
Communication Protocols
Data Networks

SKILLS

DIGITAL DESIGN

Verilog • Digital Logic • RTL Design •
Linux

PROGRAMMING

C • C++ • Python • MATLAB • Assembly
• Git • LaTeX

EMBEDDED & HARDWARE

Arduino IDE • ESP-IDF • PlatformIO •
KiCad

SOFTWARE TOOLS

MATLAB/Simulink • VS Code • Jupyter
Notebooks • Microsoft Office

LANGUAGES

Spanish (C2) • English (C1) • German (A1)

EXPERIENCE

UNIVERSIDAD DE LA FRONTERA | Research Assistant

FONDECYT 1220178 Nov 2023 - Present | Temuco, Chile

- Developed and implemented a solar-powered generation system for an IoT-based cattle monitoring collar.
- Designed a **reinforcement learning** agent for the device's energy management.
- Implemented the energy manager and monitoring system on an **ESP32-S3 microcontroller**, integrating **LoRaWAN** communication and **GPS** functionality
- Performed statistical analysis for research studies, applying appropriate statistical methods to experimental data.
- Co-authored publications in high-impact, peer-reviewed journals.

FONDEF ID21|10228 May 2023 – Jan 2024 | Temuco, Chile

- Designed and built a wind tunnel for **anemometer sensor testing**, with a monitoring system based on **Arduino**.
- Performed **data analysis using MATLAB** on environmental data collected by a drone at the Paranal Observatory.

Technologies: MATLAB/Simulink, Python, C/C++, ESP-IDF, VSC, Arduino, Excel, LaTeX, ESP32, ESP32S3, KiCad, Reinforcement Learning, Embedded Systems, Git, R

SYNOPSYS & U. DE LA FRONTERA | Trainee

May 2022 – Jan 2023 | Temuco, Chile

- Developed and implemented **MPPT** algorithms using **Verilog**.
- Developed Verilog **testbench** routines to ensure correct operation of the MPPT algorithm.

Technologies: Verilog, Icarus Verilog, VSC

CERTIFICATION & COURSES

DIGITAL INTEGRATED CIRCUIT DESIGN ACADEMY | Synopsys

Jan 2024 – Mar 2024 | Temuco, Chile

- Learned Verilog and digital design.
- Implemented an 8-bit CPU from RTL to sign-off, including synthesis and timing analysis, using Synopsys tools.
- Gained experience with Synopsys tools and Linux.
- Received the **Best Project Award** for outstanding work.

PYTHON FOR EVERYBODY | University of Michigan

Mar 2025 | Coursera

130 DUOLINGO ENGLISH TEST | Duolingo, Inc.

Aug 2025 - Aug 2027

- **Score:** 130
- **Advanced:** CEFR C1.

OTHER COURSES [Google Drive with Certificates]

- Babbel English (A1 to C1) and German (A1)
- Microsoft Excel and Word
- Leadership, productivity, and time management
- Linux, Python, and MATLAB
- Entrepreneurship, startups, and

AWARDS

2025	Winner Team	Concurso de Innovación Abierta Smart Temuco
2025		Universidad de La Frontera Award
2025		Facultad de Ingeniería y Ciencias Award
2024		ANID Scholarship for Master's Studies
2021 - 2024		Academic Excellence Award 2020 to 2023
2018	1st	27th Regional Physics Competition
2018	2nd Team	Interregional Mathematics Games
2017	1st	26th Regional Physics Competition
2017	4th - 10th	2017 National Chemistry Competition
2017	3rd	10th Regional Mathematics Championship
2016	5th	9th Regional Mathematics Championship
2015	1st	24th Regional Physics Competition
2015	8th	8th Regional Mathematics Championship

PUBLICATIONS

[1] C. González-Aguirre, D. Iglesias-Quilodrán, and C. Muñoz-Poblete. Cattle localization in free-grazing system using a distance-based gnss/sins method. *IEEE Sensors Journal*, 26(1):1011–1024, 2026.

[2] D. Iglesias and P. Galeas. Monitoreo de turbulencia atmosférica basado en drones para observatorios astronómicos. Poster presented in Jornada de Astro-Tecnología e Innovación JAIN 2023, July 2023.

[3] D. Iglesias and C. Muñoz. Gestor de energía basado en aprendizaje reforzado para dispositivo iot wearable. Poster presented in V Congreso de Estudiantes y Graduados de Postgrado de la Universidad de La Frontera, Aug. 2024.

[4] D. Iglesias and C. Muñoz. Reinforcement learning applied in energy management in wearable iot with energy harvesting. In *2024 IEEE International Conference on Automation/XXVI Congress of the Chilean Association of Automatic Control (ICA-ACCA)*, pages 1–6, 2024.

[5] D. Iglesias and C. Muñoz-Poblete. Energy manager based on reinforcement learning for a low-power iot collar worn by dairy cows. *IEEE Internet of Things Journal*, 12(16):34374–34391, 2025.

[6] D. Morales-Vargas, M. Guarda-Vera, D. Iglesias-Quilodrán, D. Cancino-Baier, and C. Muñoz-Poblete. A dataset for detecting walking, grazing, and resting behaviors in free-grazing cattle using iot collar imu signals. *Frontiers in Veterinary Science*, Volume 12 - 2025, 2025.