

# Pablo Cornejo

[LinkedIn](#) | [GitHub](#) | [Leetcode](#)

Location: Santiago, RM, Chile

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## PROFESSIONAL SUMMARY

Graduate student in Electrical Engineering with strong interdisciplinary experience across machine learning, data analysis, and deep learning research. Skilled in building end-to-end ML pipelines, developing models for regression, classification, and signal processing, and deploying efficient code in Python and PyTorch. Experienced working in cross-functional teams, leading technical initiatives, and communicating complex concepts clearly. Passionate about applied machine learning, model interpretability, and designing scalable data solutions.

## TECHNICAL SKILLS

Languages	: Python, SQL, C++
ML / DL Libraries	: PyTorch, TensorFlow, scikit-learn, NumPy, Pandas
Cloud & MLOps	: AWS, Docker, Git, GitHub
ML Techniques	: Deep Learning, Model Training, Feature Engineering
Tools	: Jupyter, VSCode, Linux

## LANGUAGES

Languages	: Spanish (Native), English (Professional Proficiency, TOEFL iBT 100)
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## EXPERIENCE

<b>Research Assistant — Visiting Graduate Student</b> <i>University of Washington, DiRAC Institute</i>	Mar 2025 – Present Seattle, WA, USA
<ul style="list-style-type: none"><li>Conducting research on symbolic regression methods for astronomical datasets under the supervision of Dr. Andrew Connolly (UW) and Dr. Pablo Estévez (U. of Chile).</li><li>Developing neural architectures and training workflows for functional discovery in astrophysical time-series.</li></ul>	
<b>ML Research Assistant</b> <i>Computational Intelligence Lab, University of Chile</i>	Mar 2023 – Present Santiago, Chile
<ul style="list-style-type: none"><li>Thesis research on neural symbolic regression, focusing on generalization, robustness, and interpretability.</li><li>Participation in research projects applying ML to astronomy, medicine, causal theory learning, and mechanical optimization.</li><li>Contributed to cross-disciplinary collaborations and presented progress in lab seminars.</li></ul>	
<b>Robotics Research Intern</b> <i>CACES Technologies</i>	Dec 2022 – Mar 2023 Santiago, Chile
<ul style="list-style-type: none"><li>Designed and evaluated a new control architecture for industrial robotic manipulators.</li><li>Prototyped algorithms and tested performance in simulated robotic environments.</li></ul>	
<b>Robotics Developer Intern</b> <i>PAT Industrial Technologies</i>	Dec 2021 – Feb 2022
<ul style="list-style-type: none"><li>Worked on programming and integration of UR and ABB industrial robotic systems for automation solutions.</li></ul>	

## EDUCATION

<b>Master of Science in Electrical Engineering</b> <i>University of Chile. Thesis: Symbolic Regression via Neural Networks for Scientific Discovery</i>	Santiago, Chile 2023 – 2025
<b>Bachelor of Science in Electrical Engineering</b> <i>University of Chile</i>	Santiago, Chile 2019 – 2023

## TEACHING ASSISTANCE

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### Lead Teaching Assistant — Computational Intelligence (2023, 2024)    *Python, ML, Optimization*    University of Chile

- Led a team of 5 teaching assistants, coordinating tasks, designing assignments, and managing course logistics for 100+ students.
- Taught core ML concepts including neural networks, optimization, evolutionary algorithms, and hands-on model development in Python. Guided students through practical coding sessions, debugging, and model evaluation workflows.

### Teaching Assistant    University of Chile

- Experimental Physics (2024), Physics for Architects (2024), Applied Electromagnetism (2022–2023), Digital Systems (2022), Differential and Integral Calculus (2021), Innovation in Electrical Engineering Seminar (2024), Doctoral Seminar (2024), Professional Internship II (2024).

## PROJECTS

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### Symbolic Regression via Neural Networks    *Python, PyTorch, Feature Selection*    [Source Code](#)

- Initiated and led a research project focused on applying neural network architectures to symbolic regression problems, specifically targeting Nguyen benchmarks.
- Developed a hybrid model that integrates neural networks with symbolic regression techniques to accurately fit complex mathematical expressions.
- Implemented a custom feature selection algorithm to enhance model efficiency and interpretability, resulting in a improvement in regression accuracy and parsimony.
- Conducted comprehensive experiments and analysis, demonstrating the model's ability to generalize across various symbolic regression tasks.

### Causality and GFlowNets for Brain Signal Recovery    *Python, GFlowNets, Signal Processing*    [Source Code](#)

- Currently developing a novel approach utilizing GFlowNets to recover and denoise brain signals obtained from medical imaging methods such as EEG.
- Incorporating causality analysis to model and understand the underlying relationships within noisy brain signal data, enhancing the robustness of signal recovery.
- Designed and implemented algorithms aimed at effectively reducing noise and reconstructing high-fidelity brain signals, addressing significant challenges in medical signal processing.
- Collaborating with interdisciplinary teams to validate the model's performance.

### Stamp Classifier    *Python, Jupyter Notebook, scikit-learn*    [Source Code](#)

- Developed and implemented enhancements based on the paper *\*Alert Classification for the ALeRCE Broker System: The Real-time Stamp Classifier\**.
- Implemented a random rotation algorithm and conducted feature selection analysis using scikit-learn to boost model performance by 15%.
- Collaborated with a team member to integrate improvements, resulting in a significant increase in SNe classification accuracy.
- Addressed data imbalance by implementing advanced augmentation techniques, enhancing model robustness.

## AWARDS & HONORS

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### University of Chile

*Tennis Athlete Distinction*    2021 – 2023  
Awarded for outstanding participation and performance in the university tennis team.

*Outstanding Student in Civil and Electrical Engineering*    2019 – 2023  
Recognized for exceptional academic performance.

*Best Teaching Assistant — Computational Intelligence*    2024  
Honored for excellence in teaching and course support.