Nilton Cesar Rojas Vales BSc.

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Education

National University of Engineering, Faculty of Science — Lima, Perú
Bachelor of Science in Computer Science — 2014 - 2021

- Wrote a bachelor's thesis on recurrent neural networks applied to the Lima Stock Exchange using official data from the exchange.
- Presented my bachelor's thesis to support the accreditation of the Computer Science program at my university by the Accreditation Board for Engineering and Technology (ABET).
- Rank: 1st in graduating class.

Skills

Languages: Spanish, English.

Programming Language: `Python3`, `C/C++`, `LISP`. `Java`,

Tools: `PyTorch`, `TensorFlow`, `Scikit-Learn`, `Docker`, `Airflow`, `GIT`.

Databases: `PostgreSQL`, `MySQL`, `Snowflake`, `MongoDB`.

Publications

1. Rojas, H., **Rojas, N.**, Espinoza, J. B., & Huamanchumo, L. (2025). A simple algorithm for output range analysis for deep neural networks. arXiv preprint, arXiv:2407.02700.
2. Rojas, H., Alvarez, C., & **Rojas, N.** (2023). Statistical Hypothesis Testing for Information Value (IV). arXiv preprint, arXiv:2309.13183.
3. **Rojas, N**. (2024). Defog Artificial Intelligence Glasses: Neural Networks for the Imperfect Real World. *Proceedings of the AAAI Conference on Artificial Intelligence*, 38(21), 23755-23756. https://doi.org/10.1609/aaai.v38i21.30554
4. Sosa S., **Rojas, N.**, et al.(2022). Methodology based on machine learning and deep learning to predict dengue transmissions. *In Proceedings of the International Astronautical Congress, IAC, 2022*.
5. Taipe L., **Rojas N.**, et al.(2022). Development of an algorithm based on deep learning for the classification of oceanic geophysical phenomena. *In Proceedings of the International Astronautical Congress, IAC, 2022*

Awards and Honors

- **AAAI-UC '24 Scholar**, Undergraduate Consortium Scholar at the Association for the Advancement of Artificial Intelligence (AAAI). 2024.02
- **LATAM Undergraduate Research Program**, Accepted into the program as a mentee, I collaborate with an experienced mentor to develop computer vision articles, gaining practical skills and knowledge. 2024.01-2024.06
- **ICCV23 Workshop - Travel Award**, International Conference on Computer Vision (ICCV), Paris, France. Workshop LatinX in Al Research. 2023.09
- **Datathon Challenge**, 2nd Place in Datathon for Integrity and the Fight against Corruption in Public Works. Organized by United States Agency for International Development and Data Science Research Peru. 2022.07
- **Continuity Scholarship**, This scholarship is part of the National Program of Scholarships and Educational Loans of the Government of Peru. Preference is given to those with high academic achievement. 2017.10-2019.07
- **Entrance examination Ranking**, Achieved first place in the entrance test for the National University of Engineering in Lima, Peru, for the Computer Science program. 2014.08

Projects

PhawAI Project 2024.01 - Present

Co-organizer. Phaw AI is an initiative aimed at helping undergraduate students in Peru gain better international research opportunities. The project provides mentorship on technical writing and graduate school applications. Assisted students in preparing applications for top conferences, and improving their visibility in the global research community.

IRMA Project 2022.10 - 2025.03 (expected date)

Software Developer for the Graphical User Interface (GUI). The GUI enables real-time experiment execution, sensor monitoring via the display integrated into the module, and ensures data storage and transmission to a ground station. Developed in Python with fault-tolerance features. Project selected to fly aboard an international space station as part of the "United Nations Cooperation on Space Utilization" program.

Internships

Wisy Platforms, Inc. | San Francisco, California 2020.09 - 2020.12

- Developed deep learning models from scratch for object detection tasks, enabling localization and counting of supermarket groceries on shelves. Built a custom dataset, including data collection, annotation, and preprocessing, to train the models using TensorFlow. Achieved 60% mean average precission at 10 (MAP@10), optimizing inventory management through automated product detection.
- Received training from Google developers.

Professional Experience

Machine Learning Engineering, RappiPay. | Bogotá, Colombia 2022.06 - Present

- Designed and implemented Machine Learning models to analyze customer behavior and predict outcomes such as delinquency prevention, fraud detection, and new customer propensity. Engineered features from raw data using Swnoflake and Python, and applied algorithms like Random Forest and XGBoost, LightGBM to achieve high predictive accuracy.

Data Analyst, Culqi SAC. | Lima, Perú 2021.10 - 2022.03

- Developed and optimized Extract, Transform, and Load (ETL) processes for the company using Python, MongoDB, and PostgreSQL. Designed and executed complex PostgreSQL queries to extract data for Power BI reporting, enabling more accurate and timely business insights. Automated workflows and established reusable Python scripts to streamline data processing, reducing manual intervention and improving efficiency.

Software Developer, Culqi SAC. | Lima, Perú 2020.03 - 2021.09

- Created, maintained, and refactored microservices utilizing both relational and non-relational databases, along with unit tests (with Jest), in moderately complex systems using TypeScript and Node.js.