Ricardo M. Leal Lopez

(811) 525 4753 • ricardo.lealpz@gmail.com • ricardoleal20.github.io/Blog/
https://github.com/ricardoleal20 • https://www.linkedin.com/in/ricardoleal20

Education and Skills.

- **MSc. Computational Science and Applied Mathematics** — **México, NL**
  Universidad Internacional de la Rioja — *October 2023 - Present*
  Specialization in Computer Science, I work developing APIs for problems solutions in the industry, using the adequate design pattern for the problem and using techniques to ensure the correct CI/CD process of the projects.

- **BSc. Physics** — **México, NL**
  Universidad Autonoma de Nuevo León, — *December 2021*
  Specialization in Computational Physics, focusing on Materials Science and Molecular Dynamics, developing data analysis tools, fracture prediction in materials, and optimization tools for the contours of different atomic structures.

Programming languages: Python, JavaScript, TypeScript, Rust, C++, Matlab, Fortran.
Knowledge: HPC, Mathematical optimization, Operations Research, API development, Big Data, Scrum Methodologies.
Programming Methodologies: Object-oriented programming, code optimization, dynamic and asynchronous programming, functional programming.

Coursers and Professional Certifications.

- **Certified as SCRUM Developer**
- **Stochastic Processes: Data Analysis**
- **AWS Fundamentals**
- **Big Data Foundations**

Work Experience.

- **Valiot** — **México, NL**
  Software Engineer — *June 2021 - Present*
  As a member of the ValueChainOS product team, I was responsible for the backend development using Python. I focused on enhancing product automation by creating and maintaining essential tools such as our ORM for interfacing with GraphQL and APIs for data sharing and connectivity with Typescript and Elixir. Additionally, I developed interfaces to address mathematical optimization problems, creating or updating constraints for the current problems that we got supported, I worked on generalizing internal packages to streamline product implementation and reduce workload and complexity, such as creating our own personal workers for running tasks using multi-threading and reporting the current state of the tasks to other interfaces around the company.

- **Facultad de Ciencias Físico Matemáticas, UANL** — **México, NL**
  Research assistant — *February 2020-June 2021*
  As a research assistant in the materials field, I utilized programming and mathematical modeling to develop simulations of various materials' behavior and analyze their reactions. I used Python to address numerical problems, create and manipulate nanostructures, as well as for data analysis and prediction of changes.

Proyects.

- **GraphQL API**
  https://ricardo-graphql-api.onrender.com
  The project involves developing a Python API using GraphQL, initially designed for internal testing and later for integration into personal projects. This API is highly flexible and adaptable, capable of being applied to virtually any GraphQL schema incorporated, thus offering a versatile and scalable solution for various development needs.

- **Simulate an epidemic using the SIRS model.**
  https://epidemic-page.onrender.com
  This project was built using Python and Streamlit. I created a API which allows simulating an epidemic using various parameters. The application is highly customizable, allowing users to adjust different values to modify the results and visualize them in interactive graphs.

- **Prediction of graduate admission using Multiple Linear Regression**
  https://admission-ml.onrender.com

  This project was developed in Python and utilizes Dash for styling and presentation. It leverages a dataset found on Kaggle containing information about different university student profiles, along with a line indicating each student's probability of admission to a graduate program. I built a Linear Regression model to predict the admission probability of future students while also providing some insights about the dataset.