Ricardo M. Leal Lopez

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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++, Golang.
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.

- **ValueChainOS, Valiot** — **México, NL**
  Software Engineer, *Data Science*, *DevOps*, *Software Architecture*, *Debugging* — *June 2021 - Present*
  Led backend development for the ValueChainOS product team using Python. Enhanced product automation by creating and maintaining tools, including an ORM for GraphQL and APIs, reducing data retrieval time by 30% and data complexity retrieval issues. Additionally, Developed interfaces to solve mathematical optimization problems, improving constraint management efficiency. Streamlined product implementation by generalizing internal packages, reducing development workload by at least 50%, including the creation of 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, *Applied Math*, *Data Analysis*, *HPC* — *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, using different techniques to improve the results and execution times. I used Python to address numerical problems, create and manipulate nanostructures, as well as for data analysis and prediction of changes.

Proyects.

- **Dynamic GraphQL API**
  https://graphql-demo.ricardoleal20.dev, *Python*, *GraphQL*
  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.

- **PyMath Compute**
  https://pymath.ricardoleal20.dev, *Python*, *Rust*
  Python tool designed to handle mathematical variables, create and evaluate mathematical expressions, and perform various mathematical optimizations. This tool consists a smooth interface in Python that includes a Rust engine for all the mathematical operations. The interface of Python includes class models that allow us to make mathematical operations with them, and includes a solver for those mathematical problems. The algorithms were implemented using Rust.