Rodrigo Kang

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Profile Summary

Physicist and Data Scientist with extensive experience in machine learning, reinforcement learning, quantum optimal control theory, and computational modeling. Strong background in probability, statistics, linear algebra, advanced mathematics, quantum computing, and computational physics. Skilled in leading scalable projects and supporting data-driven decision-making through innovative, consistent, and effective solutions that bridge scientific insight and applied AI.

Work Experience

Lead Data Scientist   *Mar 2025 - Present*
YPF Tecnología S.A. (Y-TEC)

I lead the design and development of data-driven solutions at the cutting edge of industrial R&D, integrating machine learning, reinforcement learning, optimization, numerical simulation, and quantum computing to solve complex challenges in the O&G sector. My work bridges scientific modeling and applied AI, spanning projects in predictive modeling, production optimization, quantum computing applications, and computer vision for rock image analysis, with a strong focus on combining physics-based models and AI to enhance interpretability, robustness, and scalability.

CRM Supervisor   *Jan 2025 - Mar 2025*
Cencosud S.A.

Leading the CRM team of Data Scientists and Data Analysts to enhance customer segmentation, churn prediction, and recommendation systems. Overseeing the development and deployment of machine learning models using Python, SQL, and AWS. Managing data-driven initiatives to improve customer engagement and business performance.

Data Scientist   *Jul 2023 - Dec 2024*
Cencosud S.A.

Developed predictive models by combining complex SQL queries in AWS Redshift with machine learning algorithms in Python and AWS SageMaker to support informed decision-making in retail. Built recommendation systems, customer segmentation, and churn prediction models to provide actionable insights for business strategy.

Gas Trading & Operations Research Analyst   *Apr 2020 - Jul 2023*
ECS S.A. - ENGIE GROUP

Designed and implemented commercial strategies and discrete optimization algorithms using operations research techniques for the natural gas market. Developed scalable Python algorithms for profit margin optimization through linear programming and mathematical modeling with graph theory, taking into account contractual constraints.

Programming & Balancing Analyst   *Dec 2017 - Mar 2020*
TGN S.A. - TECHINT GROUP

Analyzed large volumes of daily data to authorize loader transportation within the TGN system, taking into account operational capacity and regulatory requirements. Prepared daily and monthly balance sheets. Monitored, determined, and controlled operational imbalances across all loaders.

Education

M.Sc. in Physics   *Dec 2021*
Universidad Nacional de La Plata

Graduated with a GPA of 8.40/10, specializing in Quantum Optimal Control Theory.

Doctor of Philosophy - PhD in Physics (not completed)   *Dec 2024*
Universidad Nacional de La Plata

Conducted advanced research on hadronic physics, specifically on pion production mechanisms via neutrino scatter-

ing. Developed and applied computational models for data analysis.

Licenses & Certifications

Microsoft Azure AI Fundamentals (AI-900)   *Feb 2025*
Udemy

Introduction to AI concepts and Microsoft Azure AI services for practical applications.

Introducción a Microsoft Azure para principiantes   *Feb 2025*
Udemy

Basic overview of Microsoft Azure cloud services and core functionalities.

Masterclass en Inteligencia Artificial   *Feb 2025*
Udemy

Comprehensive training on AI concepts, techniques, and Python implementations.

AWS SageMaker Practical for Beginners   *Sep 2024*
Udemy

Hands-on experience deploying machine learning models with AWS SageMaker.

Time Series Analysis in Python   *Sep 2024*
Udemy

Techniques for analyzing, modeling, and forecasting time series data using Python.

Machine Learning Model Deployment with Streamlit   *2024*
Udemy

Deploying machine learning models via interactive web applications using Streamlit.

Curso completo de Inteligencia Artificial con Python   *May 2024*
Udemy

End-to-end AI projects and Python-based implementations of machine learning algorithms.

Curso completo de Machine Learning: Data Science en Python   *Apr 2024*
Udemy

Comprehensive coverage of machine learning workflows, data preprocessing, and predictive modeling.

Desarrollo web full Stack: Flask, PostgreSQL, JavaScript   *Apr 2024*
Udemy

Full-stack web development with Flask, database integration, and frontend JavaScript.

Aprende Git y GitHub: El control de versiones de la A a la Z   *Jan 2024*
Udemy

Version control, repository management, and collaborative development workflows using Git and GitHub.

QUANt: Quantitative Finance   *Nov 2023*
UCEMAx

Quantitative finance techniques, financial modeling, and portfolio analysis.

Computational Tools for Applied Mathematics   *Jul 2022*
Universidad Nacional de La Plata

Advanced computational methods and numerical techniques for applied mathematics problems.

El Arte de Negociar   *Sep 2022*
IAE Business School

Negotiation strategies and techniques for business and professional settings.

Probability and Statistics in Experimental Physics   *Dec 2021*
Universidad Nacional de La Plata

Statistical methods and probability theory applied to experimental physics.

Introduction to the Gas Industry *Nov 2018*
IAPG

Overview of natural gas production, transportation, and market operations.

Programming Languages

🐧 Linux
Bash scripting, system administration, and shell automation.

🐍 Python
NumPy, SciPy, Pandas, Matplotlib, Seaborn, Scikit-learn, Keras, PyTorch, TensorFlow, NetworkX, Flask.

🗄 SQL
SQLite and PostgreSQL for database management and complex queries.

aws ⊞ AWS & Azure
SageMaker, Redshift, Azure ML, Azure AI for cloud-based data processing and ML deployment.

○ Git
Version control and collaborative development via GitHub.

Other Languages & Tools
LaTeX, R, C++, HTML5, CSS3.

Languages

Spanish
Native proficiency.

English
Professional proficiency (C1).