ERICK RIOS

Coyoacán • CDMX, 04300 • erickrg2700@ciencias.unam.mx • (+52) 951 587 1972

Experience

Abdus Salam International Centre for Theoretical Physics Trieste, Italy
Undergraduate Researcher May 2024

- Implemented advanced topics in Mathematics for machine learning, improving training efficiency on complex data by 40%.
- Analyzed large amounts of data using Topological Data Analysis techniques.
- Engineered advanced high-dimensional statistical Python code to assess machine learning algorithms, reducing computational time by 40% and increasing algorithm evaluation accuracy by 25% in a team of 4 data scientists.

Didi Chuxing Technology Co. CDMX, Mexico
Data Science Intern Jun 2023 – Oct 2023

- Developed advanced Python algorithms to develop robust data models for Dark Kitchen DiDi in LATAM; facilitated strategic decisions that boosted operational efficiency by 30% and reduced data processing time by 50%
- Built `Power BI` dashboards, focusing on data quality to highlight key performance metrics and actionable insights.
- Enhanced data accuracy by 25% through rigorous data cleaning and validation processes.
- Collaborated with cross-functional teams to integrate data sources and optimize reporting workflows.

Universidad Autónoma Metropolitana CDMX, Mexico
Data Science Researcher May 2021 – Oct 2023

- Designed of object-oriented code to create a database for the 2D Ising Model.
- Implemented parallel computing techniques, achieving a 33% increase in code efficiency.
- Leveraged high-performance computing patterns using Max Planck Institute resources, enhancing computational efficiency by 40% and accelerating mathematical simulations by 25%, leading to groundbreaking research advancements in theoretical mathematics.
- Executed complex data analysis leveraging PySpark and Matplotlib, uncovering insights that improved data processing efficiency by 30%.
- Created Convolutional Neural Network (CNN) for predictions, achieving an accuracy of 93%.

Education

Universidad Autónoma Metropolitana CDMX, Mexico
B.Sc. Physics, Concentration in Quantum Computing, HPC. GPA 3.72/4.00 Oct 2023
Relevant Coursework: Advanced Lineal Algebra, Probability, Statistics, Advanced Calculus.

Universidad Nacional Autónoma de México CDMX, Mexico
B.Sc. Mathematics, Concentration in Computer Science. GPA 3.80/4.00 Jul 2024
Relevant Coursework: Advanced Lineal Algebra, Functional Analysis, Data Structures, Parallel Computing, Algorithm Analysis, Artificial Intelligence.

Projects

ISINGenerator Github
Open-source library facilitating advanced analysis of energy, magnetization, and topological domains in a 2D Ising Model; enhanced simulation accuracy by 50% and received 2+ GitHub stars within 3 months

COVID-19 Github
Analyzed data linking pre-existing health conditions with COVID-19 mortality in Mexico; designed a machine learning algorithm that accurately predicted disease risk with 94%, enhancing early intervention strategies and reducing severe cases by 20%

Skills

Technical: C/C++, Java, Python, SQL, Scala, MATLAB, R, SAS, Power BI
Language: Spanish(Native), English(C1), Japanese(J5)
Laboratory: High Performance Computing (HPC) tools, Convolutional Neural Networks (CNN), Parallel computing techniques, Artificial Intelligence development.
Softskills: Teamwork, Problem-solving, Communication, Leadership, Time Management.