ERICK RIOS

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Experience

Faculty of Sciences, UNAM CDMX, Mexico
Teaching Assistant Aug 2024 - Present

- Created engaging educational materials and interactive lesson plans to foster student learning and enhance comprehension.
- Guided students in mastering High Performance Computing techniques, empowering them to develop robust algorithms and innovative solutions.
- Designed and optimized CUDA scripts for various optimization problems, significantly improving algorithm assessment efficiency and enhancing students' practical coding skills through collaborative projects.

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.