Jaime Salvador López Viveros

Professional Summary

Mathematician with a strong background in applied mathematics, computer science, and biological data analysis. Proficient in Python, R, C++ and SQL, with hands-on experience in Linux environments. Skilled in implementing scientific algorithms, managing large datasets, and developing data processing workflows. Demonstrated ability to communicate technical results at international conferences and collaborate effectively in multidisciplinary teams. Passionate about leveraging programming skills to advance scientific research.

Education

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2023

Joint Postgraduate Program in Mathematical Sciences

Universidad Nacional Autónoma de México (UNAM) and Universidad Michoacana de San Nicolás de Hidalgo (UMSNH)

Master's in Mathematical Sciences with specialization in Biomathematics

- Thesis: Detection of recombination events in viruses using Topological Data Analysis
- Development of tools for genomic data analysis and visualization
- Current GPA: 9.1/10.0

2022

Faculty of Higher Studies Acatlán

Universidad Nacional Autónoma de México (UNAM)

Diploma in Statistical Techniques and Data Mining

- Development of skills in predictive and descriptive data analysis

2022
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2018

Faculty of Higher Studies Acatlán

Universidad Nacional Autónoma de México (UNAM)

Bachelor's Degree in Applied Mathematics and Computing

- Specialization in Advanced Programming, Numerical Analysis, and Mathematical Modeling
- Member of FES Acatlán's competitive algorithms team (2019 - 2020)

Technical Experience

Professional Skills

- Scientific Communication
- Multidisciplinary Team Collaboration
- High Adaptability
- Learning Agility
- Complex Problem-Solving
- Strong Attention to Detail
- Project Management and Organization

Technical Skills

- **Programming Languages**
  Python (NumPy, Pandas, Scikit-learn, Biopython), R, C/C++, Java, SQL, Bash
- **Version Control**
  Git/GitHub, Docker
- **Operating Systems**
  Linux, Windows, Mac OS
- **Bioinformatics Tools**
  MEGAHIT, SPAdes, FastQC, BLAST, CLUSTAL

Sample Projects

Job Posting Analysis and Fraud Detection
`https://github.com/JSbmath/Proyecto_Mineria_Datos`

- Performed exploratory data analysis (EDA) and predictive modeling on job postings data.
- Built a logistic regression model to detect fraudulent postings.
- Created interactive visualizations using Plotly, including choropleth maps and word clouds.

Data Processing and Visualization for Metagenomics
`https://github.com/JSbmath/Data-Processing-and-Visualization-for-Metagenomics`

- Processed and analyzed genomic data sequences using statistical techniques.
- Applied data visualization methods to interpret microbiome data.
- Followed best practices in data cleaning and preprocessing.

2024

Genomic Data Coordinator - CAMDA Challenge: Anti-Microbial Resistance Prediction
UNAM

- Coordinated the consolidation of genomic data from 7,772 bacterial isolates across multiple servers
- Managed partial download and processing of bacterial genome sequences using Python and Bash
- Performed genome assembly and annotation for antimicrobial resistance analysis

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2023

Master's Thesis Research - Viral Recombination Analysis using Topological Data Analysis
UNAM

- Developed a 3D visualization tool to analyze and display the behavior of viral genomes during topological data analysis, enabling researchers to observe recombination patterns in an intuitive and interactive way.
- Managed and processed genomic datasets from multiple viral strains
- Performed sequence alignment and validation using bioinformatics tools

Professional Engagements

2024

Speaker - Intelligent Systems for Molecular Biology (ISMB)
Montreal, Canada

- Research presentation: "Machine Learning Models for AMR Prediction"
- Showcased a poster on "Investigating Viral Reassortment and Recombination Patterns using Topological Data Analysis".

2024

Assistant Instructor - The Carpentries Workshop
Centro de Ciencias Matemáticas, UNAM, Morelia Campus

- Supported the teaching of a workshop on "Data Analysis - Python, Bash, and GIT"

Volunteer Activities

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2024

Member and Organizer
RSG-Mexico (ISCB Regional Student Group)

- Organized events, managed social media promotion, and presented guest speakers in monthly talks

Languages

Spanish	Native
English	Advanced
French	Intermediate
Italian	Basic
German	Basic