Jesús M. Rueda-Becerril — Ph.D.

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Profile

Data Scientist with research and industry experience, strong mathematical foundations, and expertise in Python, geospatial analysis, and machine learning. Skilled in designing scalable analytical tools, optimizing scientific code, and translating complex data into actionable insights.

Skills

Proficient: Python, QGIS, R, SQL, C/C++, Unix/Linux, Shell, git, LaTeX, Fortran 95, HDF5

Familiar: Julia, Docker, Azure

Tools: Slurm, MongoDB, Rust, Splunk, Jenkins, OpenShift

Experience

Spatial Data Scientist **May 2025 — Present**

TealWaters

- Lead project to optimize code for topographic terrain modeling and elevation derivative calculation.
- Engineered Python tools for geospatial data processing and analysis, utilizing QGIS for visualization and analysis.
- Utilize Wetland Intrinsic Potential (WIP) tool with random forest for wetland probability mapping in Skykomish watershed.
- Performed EDA, feature engineering, and geospatial data preparation for ML/AI land-cover and wetland probability models.
- Share knowledge and results with managers and decision-makers, train team members on WIP tool usage, and collaborate with software engineers and scientific team to transition prototypes into production.

Independent Research/Open-Source Developer **Jan 2024 — May 2025**

Tleco

- Simulates relativistic plasma particles and radiation rise from accelerating particles.
- Combines Rust and Python functions from the Fortran code `Paramo`.

WindsOfChange

- Simulate spore dispersion in hilly terrains using R and C++.

Software Engineer **Apr 2022 — Jan 2024**

Paychex

- Conduct data preparation, validation, and analysis in SQL from Oracle EBS datasets.
- Built Java Kafka consumers for efficient data transfer across databases; deploy using Jenkins and OpenShift.
- Collaborate with stakeholders and engineers to meet product needs and code standards.
- Create Splunk dashboards and alerts for production data analysis.

Postdoctoral Research Scientist **Jan 2018 — Apr 2022**

UMSNH (Mexico), Purdue University, Rochester Institute of Technology

- Lead NSF-sponsored project to upgrade scientific code for large-scale simulations; benchmarking and optimization.
- Obtained $68,000 NASA grant as primary researcher; managed 3 Ph.D. researchers; 5 publications, multiple presentations.
- Designed large-scale computational experiments and analytical workflows for astrophysical data and simulation outputs.
- Lead the efforts of data preparation for a support vector machine (ML) training framework.

Education

Ph.D. in Physics **Oct. 2011 – Jul. 2017**

Universitat de València, Valencia, Spain Excellent *Cum Laude*

M.Sc. in Physics **Aug. 2009 – Sep. 2011**

Universidad Michoacana de San Nicolás de Hidalgo, Morelia, Mexico

B.Sc. in Physics **Aug. 2004 – Dec. 2008**

Universidad Autónoma del Estado de México, Toluca, Mexico *"Dr. Juan Josafat Pichardo" Award*