Javier Roberto Rubalcava-Cortés

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Education

Master of Science in Mathematics
National Autonomous University of Mexico (UNAM), Mexico City, Mexico
Started: August 2024 | Expected: [2026]

Bachelor of Science in Mathematics
National Autonomous University of Mexico (UNAM), Mexico City, Mexico
Start Date: August 2019 | Graduated: June 2024 (**with honors**)

Skills

Programming Languages:

- Python, Julia, Matlab, Wolfram, R.

Tools and libraries:

- Python: Numpy, Pytorch, numba, Pandas, Matplotlib, scikit-learn, TensorFlow.
- Others: Git/Github, Linux, Relational databases, LaTeX, Excel.

Languages

- Spanish — Native
- English — B2

Research Experience

Optimization of Computational Methods for Tuberculosis Interventions
Systems Biology Research Group, Institute of Biomedical Research, UNAM, Mexico City, Mexico August 2023 – March 2024

- Developed and optimized computational models to enhance tuberculosis intervention strategies.
- Collaborated within a multidisciplinary team to analyze data and validate model outcomes.
- Presented findings at internal seminars and contributed to a manuscript currently under review.

Publications

Conference Papers:

- **Rubalcava-Cortés, J. R.**, Hernández-Cano, A., Pacheco-Tovar, A. C., Imani, F., Cammarota, R., & Imani, M. (2023). Privacy-preserving neural representation for brain-inspired learning. Design Automation and Test in Europe (DATE) Conference, Antwerp, Belgium. **Repository.**

Presentations

Oral Presentations

- **Rubalcava-Cortés, J. R.**(2023). Evolutionary game theory for the study of interactions between cancer cells. 56th National Congress of the Mexican Mathematical Society (LVI Congreso Nacional de la Sociedad Matemática Mexicana). Autonomous University of San Luis Potosí, San Luis Potosí, Mexico.
- **Rubalcava-Cortés, J. R.** Flores-Garza, E., & Domínguez-Hüttinger, E. (2024). Design and optimization of tuberculosis interventions using computational methods. 57th National Congress of the Mexican Mathematical Society (LVII Congreso Nacional de la Sociedad Matemática Mexicana). Juarez University of the State of Durango, Durango, Mexico.

Poster Presentations.

- **Rubalcava-Cortés, J. R.**, Flores-Garza, E., & Domínguez-Hüttinger, E. (2024). Design and optimization of tuberculosis interventions using computational methods. Poster session presented at the 1st Biomedical Research Fair (1ª Feria de Investigación Biomédica), Institute of Biomedical Research, National Autonomous University of Mexico (UNAM), Mexico City, Mexico.

Additional Training.

- Participant, Queretaro School of Mathematics 2024, Institute of Mathematics, Juriquilla Unit, UNAM, Querétaro, Mexico (June 2024).

Teaching Experience.

Teaching Assistant – Artificial Intelligence (Undergraduate)
Faculty of Sciences, UNAM, Mexico City, Mexico
August 2024 – August 2025

- Assisted in teaching artificial intelligence topics including machine learning and neural networks.
- Provided academic support, clarifying coursework, and offering personalized guidance.
- Developed and graded assignments and exams.