

MARIA LIZETH REYNA

Education

Present **University of Texas at El Paso**, El Paso, Texas.
Computer Science PhD. student.

May 2025 **University of Texas at El Paso**, El Paso, Texas.
M.S. Computer Science.

July 2015 **Universidad Autónoma de Ciudad Juárez**, Ciudad Juárez, Chihuahua.
Medico cirujano.

Professional experience

August 2024 – Present **University of Texas at El Paso**, El Paso, Texas.
Research Assistant.

- Conducting research on machine learning applications in the medical field.
- Collaborating with faculty on project proposals, contributing to literature reviews, and identifying relevant methodologies.
- Assisting in data collection and management for ongoing research studies.
- Participating in regular research meetings to discuss findings and contribute to strategic planning.
- Preparing research reports and presentations to communicate results to stakeholders and at conferences.

January 2024 – Present **University of Texas at El Paso**, El Paso, Texas.
Teaching Assistant, Object Oriented Programming Class/ Computer Organization/ Operating systems.

- Assisted in preparing course materials, including lectures, quizzes, and assignments.
- Delivered lectures on key programming concepts to undergraduate students.
- Facilitated Demo sessions to reinforce programming concepts for undergraduate students.
- Facilitated review sessions to help students prepare for exams and clarify topics.
- Graded assignments and provided constructive feedback to students.
- Supported students during office hours and lectures, addressing questions and clarifying concepts.

- Participated in the UTEP SEP for Teaching Assistants professional development program, 2025.
- February 2019 – Present **IMSS** (Instituto Mexicano del Seguro Social), Ciudad Juarez, Chihuahua.
Medical doctor.
- Performed medical consultations in clinic and emergency care facility/hospital. Including but not limited to diagnosis, treatment and prevention various physical injuries and diseases.
 - Provided emergency care and follow-up treatment in covid patients during the pandemic.
 - Performed CPR.
 - Assisted at surgeries.
 - Placement of central venous catheter.
 - Developed comprehensive physical exams and patient history to diagnose and control of patients with chronic diseases (diabetes and hypertension).
 - Executed prenatal care program and healthy child program.
- December 2017 – October 2020 **Renewed International**, Ciudad Juarez, Chihuahua.
Medical doctor.
- Develop comprehensive physical exams and patient histories. As well as filling of medical files (clinical history, medical notes, medical references) and epidemiological forms (SUIVE).
 - Perform initial check-ups and follow-ups of pediatric patients to ensure health throughout the stay at the facility.
 - Perform medical consultations. Including but not limited to diagnosis, treatment and prevention various physical injuries and diseases.
 - Provide health related lectures to patients.
- August 2016 – July 2017 **IMSS Prospera UMR Rancho Colorado**, Rancho Colorado, Bachiniva.
Medical Director of rural clinic.
- Developed comprehensive physical exams and patient history to diagnose and control of patients with chronic diseases (diabetes and hypertension).
 - Developed comprehensive physical exams and patient history of patients affiliated to “Prospera” program to ensure health.
 - Executed prenatal care program and healthy child program.
 - Realized vaccination program.
 - Effectuated first aid care, suture wounds, cleaning wounds, debridement, urinary catheter, orogastric probe, application of intravenous solutions and medicines, and application of intramuscular medicines.
 - Performed medical consultations. Including but not limited to diagnosis, treatment and prevention various physical injuries and diseases.
 - Provided health related lectures to the community and teenagers.
 - Filled medical files (clinical history, medical notes, medical references) and epidemiological forms (SUIVE). As well as other forms (SISPA, OCE99, TC1).
 - Developed a work program, a community study, an endemic channels, a collective health diagnosis, and an informational flipchart.

August 2015 – July 2016

IMSS General Hospital Zone #6, Ciudad Juarez, Chihuahua.

Intern medic

- Effected first aid care, suture wounds, cleaning wounds, debridement, urinary catheter, orogastric probe, application of intravenous solutions and medicines, and application of intramuscular medicines, take and interpretation of electrocardiogram, splinting.
- Performed CPR.
- Treated and took care of patients at their labour, delivery and immediate postpartum.
- Performed neonatal examination.
- Assisted at surgeries.
- Performed medical consultations. Including but not limited to diagnosis, treatment and prevention various physical injuries and diseases.
- Interpreted laboratory information to provide patients with proper treatment.
- Filled medical files (clinical history, medical notes, medical references) as wells as the census of hospitalized patients.

Ongoing Research

- Machine Learning in Developmental Hip Dysplasia Diagnostics
Exploring approaches to improve diagnostic accuracy and clinical integration in pediatric orthopedics.
- Machine Learning Applications for Lymphoma Treatment
Exploring the use of machine learning algorithms to improve treatment outcomes and personalize therapies for lymphoma patients.
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Publications & Posters

- Reyna-Cruz, M. L., Tabares, R., Ceberio, M., Kreinovich, V., Lauter, C., & Barraza, C. A. M. (2024, October). Machine Learning-Based Screening for Pediatric Hip Dysplasia: Towards a Validated Approach. In *2024 58th Asilomar Conference on Signals, Systems, and Computers* (pp. 1891-1894). IEEE.
https://ieeexplore.ieee.org/abstract/document/10942608?casa_token=Mzo9nAPokTAAAAAA:EC0jr4eGuk-Felai6VOnzhE1X3LkiyPibLjNwzthhJVqdx-5kPiRRbR_sfq_wxGmDHL-qT2Www
- Reyna-Cruz, M. L., Ceberio, M., Lauter, C., & Valles, J. M. L. (2025). Deep Learning Explainability on Non-Hodgkin Lymphoma: Relapse & Treatment. *Artificial Intelligence in Medicine and Healthcare*, 75.
https://www.researchgate.net/profile/Sergey-Yurish/publication/390831248_Artificial_Intelligence_in_Medicine_and_Healthcare_Proceedings_of_the_1st_International_Conference_on_AI_in_Medicine_and_Healthcare_AiMH'_2025_8-10_April_2025_Innsbruck_Austria/links/67ff7dcad1054b0207d4b4b5/Artificial-Intelligence-in-Medicine-and-Healthcare-Proceedings-of-the-1st-International-Conference-on-AI-in-Medicine-and-Healthcare-AiMH-2025-8-10-April-2025-Innsbruck-Austria.pdf#page=76
- Reyna-Cruz, M. L., Ceberio, M., & Lauter, C. (2025). Trust by Design: Building Reliable Clinical Artificial Intelligence to Advance Quality in Patient-Centered Care. Poster presented at 2025 Forward: Building Trust to Shape the Future of Quality and Human Experience, Mayo Clinic, Rochester, MN.

- Reyna-Cruz, M. L., Ruiz-Rohena, K., Guel, Y. I., Salgado, H., Taldir, L., Ramos, E. P., ... & Volkova, A. (2025). Contribution to Error Analysis of Deep Neural Networks: Case of the Activation Functions.
<https://inria.hal.science/hal-05367563/>

Awards & Fellowships

- Sloan Centers for Systemic Change Fellow, 2025.
- UTEP Travel Grant Recipient, Artificial Intelligence in Medicine and Healthcare, 2025

Technical Skills

- Programming Languages: Python, Java, R
- Libraries & Frameworks: Jupyter Notebook, TensorFlow, Scikit-learn, Pandas
- Machine Learning & Data Analysis
- Object-Oriented Programming
- Microsoft Office Suite (Word, Excel, PowerPoint)

Languages

- English
- Spanish (Native)

Personal Strengths

- Highly organized
- Detail-oriented