

MARIA LIZETH REYNA

Education

Present	University of Texas at El Paso , El Paso, Texas. <i>Computer Science PhD. student.</i>
May 2025	University of Texas at El Paso , El Paso, Texas. <i>M.S. Computer Science.</i>
July 2015	Universidad Autónoma de Ciudad Juárez , Ciudad Juárez, Chihuahua. <i>Medico cirujano.</i>

Professional experience

August 2024 – Present	University of Texas at El Paso , El Paso, Texas. <i>Research Assistant.</i> <ul style="list-style-type: none">• 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. <i>Teaching Assistant, Object Oriented Programming Class/ Computer Organization/ Operating systems.</i> <ul style="list-style-type: none">• 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=Mzo9nAPokTAAAAA: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