

# Luis Norberto Zuñiga Morales

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## Summary

Data Scientist specialized in multimodal analysis of text and image data, with extensive experience designing and deploying advanced AI solutions. Ph.D.-level adjunct professor supporting diverse social science research projects with robust quantitative and computational methodologies. AI and IT solutions specialist with deep expertise in Machine Learning, Deep Learning, Generative AI, few-shot learning, Large Language Models, and AI agents. I am seeking opportunities that allow me to leverage my technical and research background to build impactful, scalable AI systems and tackle complex real-world challenges.

## Education

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| <b>PhD Universidad Iberomericana</b> , Postgraduate in Engineering Sciences. Honorable Mention.                                                                                                                                                                                                                                                                                                                                                                        | 2021 – 2025 |
| <ul style="list-style-type: none"> <li>• <b>Highlight:</b> In this work we study the impact of multimodal information to predict the sentiment polarity of tweets regarding: a) COVID-19 and b) sport events, taking place in Mexico. In particular, we use a series of Large Language Models to represent text and image data to fuse them using different fusion rules and a Support Vector Machine to predict the final sentiment label of each element.</li> </ul> |             |
| <b>MS Instituto Politécnico Nacional</b> , Master in Computer Science                                                                                                                                                                                                                                                                                                                                                                                                  | 2015 – 2017 |
| <ul style="list-style-type: none"> <li>• <b>Highlight:</b> We gathered financial related tweets regarding selected companies listed in the Mexican Stock Exchange in order to create a learning model to predict the direction of the stock price movement.</li> </ul>                                                                                                                                                                                                 |             |
| <b>BS Instituto Politécnico Nacional</b> , Mathematical Engineer                                                                                                                                                                                                                                                                                                                                                                                                       | 2010 – 2014 |

## Experience

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| <b>Universidad Iberoamericana</b> , Full Time Professor / Researcher at INIAT (Current)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Mexico<br>2026 |
| <ul style="list-style-type: none"> <li>• Management of research grants.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |
| <b>Hello CIT</b> , AI and Contact Center Specialist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Mexico<br>2025 |
| <ul style="list-style-type: none"> <li>• Management and implementation of AI solutions to automate speech and text applications for Spanish-based processes directly into Huawei's AICC service.</li> <li>• Agent development and deployment for automation of tasks related to public tenders processes and analysis.</li> <li>• Automation of the generation process of bpmn files based on different business process via a custom tool.</li> <li>• Custom CRM design enhanced with AI solutions for internal use.</li> <li>• Design and implementation of the computer lab, computer network, and AI program of the 10 de Mayo school.</li> </ul> |                |

**MAYiA, AI Solutions Lead**Mexico  
2025

- Management and implementation of AI solutions to automate data intensive business processes in on-premise and public cloud servers.
- Customer attention and sales representative regarding business AI solutions offered by MAYiA.
- Link between AI solution development companies, technical support, clients, and MAYiA.
- Development and implementation of curriculum for MAYiA Academy. Specifically, syllabi were developed for courses in areas such as Machine Learning, Deep Learning, Generative AI, Python programming, AI for business, among others.

**Universidad Nacional Autónoma de México, DGTIC, Teaching Assistant**Mexico  
November 2025  
October 2025

- Fundamentals of Accelerated Computing with CUDA Python NVIDIA Deep Learning Institute workshop. In charge of teaching the first module of the workshop and support students in the other two along with a NVIDIA ambassador.

**Universidad Iberoamericana, Adjunct Professor (Part Time)**Mexico  
2022–2026

The following courses were taught at the university:

- Data Science for International Relationships, International Relationships.
- Selected Topics on Information Systems, Actuarial Sciences.
- Data Intelligence, Actuarial Sciences.
- Machine Learning, Actuarial Sciences
- Technologic Trends, mainly students from Global Businesses, Hospitality, and Accountancy.
- Algorithms and Programming Workshop. Administration, Global Businesses, Hospitality.

**Allerstand, Data Scientist**Mexico  
2017 – 2021

- Data lead in charge of pipeline construction and maintenance for internal information gathering, processing, storing, transformation, and visualization.
- Creation of software tools to automatize data extraction, processing, and aggregation from sources like PDFs, receipts, and emails using OCR and text-parsing tools.
- Custom implementation of CRM systems and data analysis.

## Publications

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**L. N. Zúñiga-Morales**, J. Á. González-Ordiano, J. E. Quiroz-Ibarra, and S. J. Simske, “On the impact of image and text data on multimodal sentiment analysis in Spanish,” *Multimedia Tools and Applications*, vol. 85, no. 4, p. 281, 2026, doi: [10.1007/s11042-026-21478-1](https://doi.org/10.1007/s11042-026-21478-1) .

2026

L. Bustio-Martínez et al., “Enhanced phishing detection using multi-modal data,” *Knowledge Based Systems*, vol. 334, p. 115105, 2026, doi:<https://doi.org/10.1016/j.knosys.2025.115105> .

2026

M. Portillo Sánchez, J. Á. González Ordiano, J. E. Quiroz Ibarra, and **L. Zúñiga Morales**, “Análisis de emociones en torno a las comunidades de activistas en el contexto de las movilizaciones del #8M2023 en México,” *Revista Iberoamericana de Comunicación*, vol. 3, no. 45, pp. 11–34, Jan. 2025, [Online]. Available: <https://ric.iberomx/index.php/ric/article/view/190> .

2025

**L. N. Zúñiga-Morales**, J. Á. González-Ordiano, J. E. Quiroz-Ibarra, and C. Villanueva Rivas, “Machine learning framework for country image analysis,” *Journal of Computational Social Science*, vol. 7, no. 1, pp. 523–547, 2024, doi: [10.1007/s42001-023-00246-3](https://doi.org/10.1007/s42001-023-00246-3) .

2024

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| L. Bustio-Martínez et al., “Uncovering phishing attacks using principles of persuasion analysis,” Journal of Network and Computer Applications, p. 103964, 2024, doi: <a href="https://doi.org/10.1016/j.jnca.2024.103964">10.1016/j.jnca.2024.103964</a>  .                                                                                                                                                                           | 2024 |
| L. Bustio-Martínez et al., “Towards Automatic Principles of Persuasion Detection Using Machine Learning Approach,” in Progress in Artificial Intelligence and Pattern Recognition, V. and R. S. J. Hernández Heredia Yanio and Milián Núñez, Ed., Cham: Springer Nature Switzerland, 2024, pp. 155–166.                                                                                                                                                                                                                 | 2024 |
| <b>L. N. Zúñiga-Morales</b> , J. Á. González-Ordiano, J. E. Quiroz-Ibarra, and S. J. Simske, “Impact Evaluation of Multimodal Information on Sentiment Analysis,” in Advances in Computational Intelligence, O. Pichardo Lagunas, J. Martínez-Miranda, and B. Martínez Seis, Eds., Cham: Springer Nature Switzerland, 2022, pp. 18–29. doi: <a href="https://doi.org/10.1007/978-3-031-19496-2_2">10.1007/978-3-031-19496-2_2</a>  . | 2022 |
| <b>L. N. Zúniga-Morales</b> , A. Zúniga-López, J. Villegas-Cortez, C. Avilés-Cruz, and F. Morales-Torres, “Análisis preliminar del sentimiento sobre la vacunación del COVID-19 en México,” Research in Computing Science, vol. 150, no. 5, pp. 281–294, 2021.                                                                                                                                                                                                                                                          | 2021 |

## Projects

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| <b>COVID-19 Spanish Sentiment Polarity Analyzer</b>                                                                                                                                                                                                                                                                                                                                                                              | 2025 |
| <ul style="list-style-type: none"> <li>Trained a multimodal model (text and images) based on BETO and Vision Transformer to perform polarity analysis of social media posts in Spanish regarding COVID-19 related topics achieving 96% F1 score. Demo available <a href="#">here</a> .</li> </ul>                                               |      |
| <b>Mexican Boxing Sentiment Polarity Analyzer</b>                                                                                                                                                                                                                                                                                                                                                                                | 2025 |
| <ul style="list-style-type: none"> <li>Trained a multimodal model (text and images) based on BETO and Vision Transformer to perform polarity analysis of social media posts in Spanish regarding boxing fights of Mexican fighter Saúl «Canelo» Álvarez achieving 77.76% F1 score. Project Github available <a href="#">here</a> .</li> </ul> |      |
| <b>Text detection in images</b>                                                                                                                                                                                                                                                                                                                                                                                                  | 2024 |
| <ul style="list-style-type: none"> <li>Trained a model based on YOLO v8 and Ultralytics to detect text embedded in images, similar to memes in social media posts.</li> </ul>                                                                                                                                                                                                                                                    |      |
| <b>Phishing detection on emails</b>                                                                                                                                                                                                                                                                                                                                                                                              | 2023 |
| <ul style="list-style-type: none"> <li>Build new phishing detection models applied to emails. Responsible of the multilabel model to detect persuasion principles in English using Large Language Models.</li> </ul>                                                                                                                                                                                                             |      |
| <b>#8M on Twitter</b>                                                                                                                                                                                                                                                                                                                                                                                                            | 2023 |
| <ul style="list-style-type: none"> <li>Social network analysis and data collector for the 2023 International Women’s Day movement on Twitter. Hashtag analysis, community detection, temporal analysis of communities, sentiment analysis of tweets, and user classification based on their comments.</li> </ul>                                                                                                                 |      |
| <b>Human rights recommendations labeling automation</b>                                                                                                                                                                                                                                                                                                                                                                          | 2023 |
| <ul style="list-style-type: none"> <li>Responsible for building multilabel models to automatically classify human rights recommendations from different intergovernmental organizations using Large Language Models.</li> </ul>                                                                                                                                                                                                  |      |
| <b>Opinion mining for electoral preference modeling</b>                                                                                                                                                                                                                                                                                                                                                                          | 2023 |
| <ul style="list-style-type: none"> <li>Data mining in Twitter (now X) using the Twiter API.</li> </ul>                                                                                                                                                                                                                                                                                                                           |      |
| <b>Impact of Mining in Latin America</b>                                                                                                                                                                                                                                                                                                                                                                                         | 2022 |
| <ul style="list-style-type: none"> <li>Project focused on collecting and analyzing information from alternative digital sources reporting mining activities in Latin America from 2010 to 2022.</li> <li>Part-time data collector and data labeling.</li> </ul>                                                                                                                                                                  |      |

## Proyecto Imagen de México

2022–2023

- Project that focuses on determining the image of Mexico abroad by analyzing serious information sources from social networks and news outlets using different APIs in collaboration with the International Relationships Department at Universidad Iberoamericana.
- Data gathering, data processing, and training of learning models. Trained a model based on fine-tuning LLMs increasing, approximately, 14%  $F1$  score from previous efforts and established a new baseline for future work.

## Grants and Fellowships

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**Convocatoria extraordinaria 2026. Proyectos de Investigación en Inteligencia Artificial.** Dirección de Investigación y Posgrado, Universidad Iberoamericana Ciudad de México.

- Project: Análisis de texto e imágenes en redes sociales en español
- Amount: \$60,000.00 MXN.
- Period: 2026 – 2027
- Role: Principal Investigator (PI)

## Workshops And Awards

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**Artificial intelligence for International Relations with an automated classification model.** Conmemoración de los 40 años del programa de Licenciatura en Relaciones Internacionales y 25 años de la fundación del DEI. Universidad Iberoamericana Ciudad de México.

**Data collection and classification workshop for the Country Image Analytical Model.** Construyendo el futuro de la inteligencia artificial. Universidad Iberoamericana Ciudad de México.

**Department Prize for Outstanding Teaching Performance.** Universidad Iberoamericana.

## Certifications

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**ITIL Foundation Certificate in IT Service Management**, 2025. Awarded by PeopleCert.

**Introducción a los Derechos Humanos**, 2025. Awarded by Amnesty International.

**Fundamentals of Accelerated Computing with CUDA Python**, 2025. Awarded by NVIDIA Deep Learning Institute.

**Fundamentals of MCP**, 2025. Awarded by [Hugging Face](#).

**How to Create Video for Online Courses**, The University of Edinburgh, 2025. Awarded by [Coursera](#).

**Prevención de la violencia de género en el ámbito universitario 2023 - Educación continua**, Awarded by Diversipedia.

**SQL for Data Science**, UC Davis 2023. Awarded by [Coursera](#).

**Design Database MySQL**, 2015. Awarded by IT Open Knowledge Center.

**Fundamentals of Web Design**, 2015. Awarded by IT Open Knowledge Center.

## Skills

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**Languages:** English, French, Spanish (Native).

**Coding:** Python

**AI:** Claude Code

**Software:** Tableau, Gephi.

**Microsoft Office:** Word, Excel, Power Point, Power BI.

**Machine Learning/Deep Learning:** Scikit-learn, Tensorflow, Pytorch, MLFlow, Hugging Face.

**Databases:** MySQL.

**APIs:** Twitter, Reddit, New York Times, The Guardian, Youtube, World News.