

Juan Vásquez

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EDUCATION

PhD. in Computer Science

August 2023 – Present

University of Colorado Boulder

Boulder, USA

Adviser: Dr. Maria Leonor Pacheco

Co-adviser: Dr. Alexis Palmer

MS. in Computer Science (Graduation in process)

August 2021 – June 2023

Applied Mathematics and Systems Research Institute (IIMAS) at UNAM

Mexico City, Mexico

Thesis: *A neuro-symbolic approach for automatic classification of hateful language in Mexican Spanish using simply-typed λ -calculus*

Adviser: Dr. Gemma Bel Enguix

BS. in Engineering Physics

January 2015 – December 2019

Universidad Iberoamericana

Mexico City, Mexico

Graduation project: *Data mining: Searching for Chaos in Polynomial Ordinary Differential Equations*

Adviser: Prof. Salvador Carrillo Moreno

NON-FORMAL EDUCATION

The 34th European Summer School on Language, Logic and Information

July 31 – Aug 11, 2023

University of Ljubljana, Faculty of Computer and Information Science

Ljubljana, Slovenia

The 13th Lisbon Machine Learning School

July 14 – 20, 2023

Instituto Superior Técnico

Lisbon, Portugal

Summer school on Neurosymbolic Programming

July 11 – 13, 2022

California Institute of Technology

Pasadena California, USA

Data Science Workshop (six two-hour sessions)

March – April, 2018

Universidad Iberoamericana

Mexico City, Mexico

PEER-REVIEWED MANUSCRIPTS

Bel-Enguix, Gemma, Helena Gómez-Adorno, Gerardo Sierra, **Juan Vásquez**, Scott Thomas Andersen, and Sergio Ojeda-Trueba. “Overview of HOMO-MEX at Iberlef 2023: Hate speech detection in Online Messages directed Towards the MEXican Spanish speaking LGBTQ+ population.” *Procesamiento del Lenguaje Natural* 71 (2023): 361-370.

Vásquez, Juan, Scott Andersen, Gemma Bel-Enguix, Helena Gómez-Adorno, and Sergio-Luis Ojeda-Trueba.

“Homo-mex: A mexican spanish annotated corpus for lgbt+ phobia detection on twitter.” In *The 7th Workshop on Online Abuse and Harms (WOAH)*, pp. 202-214. 2023.

Bel-Enguix, Gemma, Gerardo Sierra, Helena Gómez-Adorno, Juan-Manuel Torres-Moreno, Jesus-German Ortiz-Barajas, and **Juan Vásquez**. “Overview of PAR-MEX at Iberlef 2022: Paraphrase Detection in Spanish Shared Task.”

Procesamiento del Lenguaje Natural 69 (2022): 255-263.

Enguix, Gemma Bel, Helena Gómez-Adorno, Karla Mendoza, Grigori Sidorov, and; **Juan Vásquez**. “La# felicidad en Twitter:¿ qué representa realmente?.” *Linguamatica* 14, no. 1 (2022): 3-15.

Vásquez, Juan, Gemma Bel-Enguix, Scott Thomas Andersen, and Sergio-Luis Ojeda-Trueba. “Heterocorpus: A corpus for heteronormative language detection.” In *Proceedings of the 4th Workshop on Gender Bias in Natural Language Processing (GeBNLP)*, pp. 225-234. 2022.

Vásquez, Juan, Helena Gómez-Adorno, and Gemma Bel-Enguix. “Bert-based Approach for Sentiment Analysis of Spanish Reviews from TripAdvisor.” In *IberLEF@ SEPLN*, pp. 165-170. 2021.

TEACHING EXPERIENCE

Introduction to NLP with Python (fifteen two-hour sessions)

Language Engineering Group (Grupo de Ingeniería Lingüística) at UNAM

Mexico City, Mexico

September 2021 – July 2022

- Created all the materials for the course.
- Presented each one of the fifteen sessions.
- Assisted the students through the course.

Introduction to Programming with Python

Prepa Ibero

Mexico City, Mexico

January 2023 – June 2023

- Created all the materials for the course.
- Taught the materials through the semester to two groups.
- Graded the students.

EMPLOYMENT

University of Arizona

Consultant - NLP Engineer

March 2023 – August 2023

Mexico City, Mexico

- Performed automatic classification experiments on a corpus of crime-related news from Honduras, El Salvador, and Guatemala.
- Fine-tuned and evaluated different pre-trained multilingual language models with a manually annotated corpus of crime-related news from Mexico.
- Wrote various scripts for data cleaning and data pre-processing.

Beet Consulting

Data Consultant

June 2018 – January 2021

Mexico City, Mexico

- Wrote all the necessary code for the data pre-processing, data analysis, and data visualizations requested by the clients.
- Presented slides to various executives in order to help them have a better understanding of their HR departments.

GMEC Consulting

Business Analyst

October 2014 – July 2016

Mexico City, Mexico

- Contributed to the creation of various presentations for clients.
- Researched relevant data for various projects.

OTHER ACADEMIC ACTIVITIES

Keynote Talk

The State of NLP in Latin America | Queer in AI @ ACL 2023 Workshop.

July 2023

Reviewer

- EasyChair paper subreview | Mexican International Conference on Artificial Intelligence 2022.

August 2022

OTHER PROFESSIONAL ACTIVITIES

ABIOGENESIS Project | Fundación Cisneros

Software Developer

January 2021 – August 2021

- Planned, designed and worked on the computational aspects of the ABIOGENESIS project. The goal of this project was to digitize a custom painting, detect and modify its components using a machine learning algorithm, and create a new digital image that could be shown in an art installation that explored the intersection between art and artificial intelligence.
- Supervised the manual annotation of an image dataset, in order to train a custom object detection model.
- Wrote code that performed object detection on the digitized image created from the original painting. After the object detection, the objects changed their RGB values in order to simulate change in their physical properties.

VOLUNTEER EXPERIENCE

Plural Ibero | Universidad Iberoamericana

August 2017 – July 2018

- Helped organize, conduct, and moderate various talks for the *human diversity week* - five days in which the University allotted the Organization a budget that allowed us to create, promote, and execute various events that would create consciousness of the particular struggles faced by the LGBT+ population.
- Organized and conducted a weekly queer theory reading group with the members of the student association. Each session I would propose a reading, and I would encourage discussions around it.

SKILLS

Programming languages: Python (advanced), Java (coursework), C++ (coursework), R (coursework), Haskell (coursework), Coq (master's thesis work).

Libraries: pandas, NumPy, Matplotlib, spaCy, openCV, NLTK.

Frameworks: TensorFlow, PyTorch.

Spoken languages: Spanish (native), English (advanced), French (intermediate).