

Juan Vásquez

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EDUCATION

Ph.D. in Computer Science - GPA 4.0

August 2023 – Present

University of Colorado Boulder

Boulder, USA

Adviser: Dr. Maria Leonor Pacheco **Co-adviser:** Dr. Alexis Palmer

MS. in Computer Science with specialization in AI

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 **Co-adviser:** Dr. Karla Ramírez-Pulido

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: Dr. 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

CSCI 5832: Natural Language Processing - Teaching Assistant

University of Colorado Boulder - Department of Computer Science

Boulder, USA

January 2024 – currently

- Assist in teaching the course materials.
- Create the course assignments.

CSCI 1300: Starting Computing - Teaching Assistant

University of Colorado Boulder - Department of Computer Science

Boulder, USA

August 2023 – December 2023

- Assisted in teaching the course materials.
- Hosted office hours.
- Led one recitation per week during the semester.

Introduction to NLP with Python - Main Lecturer

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 - Main Lecturer

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 and evaluated various automatic text classification experiments on a *corpus* of crime-related news from Honduras, El Salvador, and Guatemala.
- 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

Reviewer

January 2024

- Paper review (one) | 2024 Annual Conference of the North American Chapter of the Association for Computational Linguistics.

Reviewer

January 2024

- Paper review (four) | The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation

Keynote Talk

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

July 2023

Reviewer

August 2022

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

OTHER PROFESSIONAL ACTIVITIES

ABIOGENESIS Project | Fundación Cisneros

January 2021 – August 2021

Software Developer

- 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, Polars, NumPy, Matplotlib, spaCy, openCV, NLTK.

Frameworks: TensorFlow, PyTorch.

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