

JOSEPH MARTÍNEZ

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SKILLS

- Git/GitHub
- Machine Learning
 - RFC, SVM, XGBoost models
 - Clustering, PCA
- Python and R
 - Data Visualization
 - matplotlib, R/ggplot2
 - Tableau, Excel
- Statistical Analysis
- Natural Language Processing
 - spaCy, sci-kit learn, LLMs APIs
 - Transformers, HuggingFace

WORK EXPERIENCE

Virginia Modeling, Analysis, & Simulation Center (VMASC)

Norfolk, VA

Graduate Research Assistant

Sep 2022 – Present

- Fine-tuned the generative LLM Llama2 for Named Entity Recognition (NER) using an HPC.
- Trained and fine-tuned NLP classification models (KNN, RFC, and BERT) to identify frustration.
- Maintained detailed documentation of models, algorithms, and reports on GitHub repositories
- Presented at a research conference in Pittsburgh, attended others in Arlington and Oxford, OH.

Old Dominion University

Norfolk, VA (Remote)

Project Consultant - NLP-based Social Media Data Analyst

Jul 2021 – Jan 2022

- Fine-tuned NLP classification models (spaCy, BERT, and RoBERTa) with Python.
- Extracted, filtered, and cleaned 7.3M Tweets with Twitter's API and Python.
- Created engaging dashboards with Tableau and Google Data Studio to represent migration data.
- Collaborated with interdisciplinary research teams from Norway, Colombia, Greece, and the US.

Universidad del Norte

Barranquilla, Colombia

Researcher – Social Media Data Collection, Analysis, and Visualization

Nov 2020 – Jun 2021

- Gathered, filtered, and cleaned geo-tagged tweets on migration using Twitter's API and Python.
- Conducted a lexicon-based Sentiment Analysis of Tweets to spot xenophobic trends.
- Performed Social Network Analysis (SNA) of Tweets with Gephi.
- Developed a Natural Language Understanding (NLU) model with IBM Watson to semi-automate the identification of actors, factors, and relationships from news articles.

PUBLICATIONS

- Frydenlund, Erika, Joseph Martínez, Jose J. Padilla, Katherine Palacio, and David Shuttleworth. "Modeler in a Box: How Can Large Language Models Aid in the Simulation Modeling Process?" SIMULATION, (2023). [Under revision]
- Martínez, Joseph, Melissa Miller-Felton, Jose J. Padilla, Erika Frydenlund, and Katherine Palacio. "Behind Derogatory Terming for Venezuelan Migrants in Colombia: Xenophobia and Sexism Identification with Twitter Data and NLP." SBP-BRiMS 2023, (2023) [Poster session]

EDUCATION

Old Dominion University

M.Sc. Modeling and Simulation
Engineering

Aug 2022 – Sep 2024 (expected)

Correlation One

Data Science for All
(DS4A Bootcamp)

Mar 2022 – Jul 2022

Universidad del Norte

B.Sc. Industrial Engineering

Jan 2017 – Mar 2022