

# Yarik Menchaca Resendiz

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## Profile

I am a final-year Ph.D. candidate specializing in Natural Language Processing (NLP), Large Language Models (LLMs), and Artificial Intelligence (AI). With a strong background in both academic and industry research. I focus on developing AI/ML methods, prompt optimization for LLMs, and deploying NLP applications. I have also taught and mentored students. I enjoy applying my skills to solve real-world problems, whether it's through research or implementing AI-driven solutions.

## Skills

Coding	— Python (8 yrs), R (2 yrs), SQL (4 yrs), Java (3 yrs), C++ (4 yrs), C# (3 yrs), Matlab (4 yrs), ...
ML Models	— Training from scratch/fine-tuning/API: Gemini, GPT family, LLaMA family, T5, BART, Mistral, BERT, ...
Libraries	— TensorFlow, Keras, PyTorch, Transformers, Scikit-learn, SciPy, NLTK, Spacy, Numpy, Pandas, ...
Visualization	— Matplotlib, Seaborn, Pyplot, Shiny, Power Bi, Jupyter Notebook, ...
Deployment	— MLOPs practices, Docker, Microsoft Azure, Git, ...

## Professional Experience

06.2018 – 09.2021	<b>— Data Scientist – Kantar, México</b> Researched and developed AI/ML methodologies for data analysis and insights to help brands make data-driven decisions and enhance their marketplace performance. — Built TextAI's engine, an in-house text mining tool for Named Entity Recognition, Sentiment Analysis, Machine Translation, Topic Modeling, and Topic Naming, supporting 10 languages (English, Spanish, German, French, Portuguese, Chinese, etc.). — Developed domain-specific to general language machine translation models that convert specialized language (e.g., legal, medical, technical jargon) into general language, improving accessibility and understanding for wider audiences. — Created a machine learning model to analyze user purchase behavior, identifying frequently bought products, suggest suitable substitutes, and categorizing items for personalized recommendations.
02.2017 – 08.2017	<b>— Research Intern – University of Wolverhampton, UK</b> Developed a Machine Learning Sentiment Analysis application for Spanish texts.

## Education

2021 – 2024	<b>— Ph.D. in Computational Linguistics – University of Stuttgart, Germany.</b> <i>Focused on guiding and conditioning LLMs outputs using psychological emotion theories to improve their emotional intelligence and adaptability. Developed multi-objective prompt optimization techniques for LLMs and applied reinforcement learning through LLMs prompt optimization.</i>
2015 – 2017	<b>— M.Sc. Computer Science – Instituto Politécnico Nacional, México.</b> Final Grade: 9.8/10 (Graduated with Honors). Thesis title: <i>Stress and Relaxation Strength Detection of Spanish Tweets.</i>
2011 – 2015	<b>— B.Eng. Computer Science – Instituto Politécnico Nacional, México.</b> Final Grade: 8.3/10. Thesis title: <i>Intelligent and Adaptive Alert System for Gas Leak Detection in Stoves with Real-Time Notifications to Email and Mobile Devices.</i>
2008 – 2011	<b>— Technician in Computer Systems – CBTis 03, México.</b> Final Grade: 9.0/10. <i>Hardware maintenance, network configuration, software development, system management, database.</i>

## Research Publications

1	Yarik Menchaca Resendiz and Roman Klinger. "Affective Natural Language Generation of Event Descriptions through Fine-grained Appraisal Conditions". In: <i>Proceedings of the 16th International Natural Language Generation Conference</i> . Ed. by C. Maria Keet, Hung-Yi Lee, and Sina Zarrieß. Prague, Czechia: Association for Computational Linguistics, Sept. 2023, pp. 375–387. <a href="https://doi.org/10.18653/v1/2023.inlg-main.26">DOI: 10.18653/v1/2023.inlg-main.26</a> .
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- 2 Yarik Menchaca Resendiz and Roman Klinger. “Emotion-Conditioned Text Generation through Automatic Prompt Optimization”. In: *Proceedings of the 1st Workshop on Taming Large Language Models: Controllability in the era of Interactive Assistants!* Ed. by Devamanyu Hazarika, Xiangru Robert Tang, and Di Jin. Prague, Czech Republic: Association for Computational Linguistics, Sept. 2023, pp. 24–30. [URL: https://aclanthology.org/2023.t11m-1.3](https://aclanthology.org/2023.t11m-1.3).
- 3 Yarik Menchaca Resendiz et al. “IMS\_medicalY at #SMM4H 2024: Detecting Impacts of Outdoor Spaces on Social Anxiety with Data Augmented Ensembling”. In: *Proceedings of The 9th Social Media Mining for Health Research and Applications (SMM4H 2024) Workshop and Shared Tasks*. Ed. by Dongfang Xu and Graciela Gonzalez-Hernandez. Bangkok, Thailand: Association for Computational Linguistics, Aug. 2024, pp. 83–87. [URL: https://aclanthology.org/2024.smm4h-1.19](https://aclanthology.org/2024.smm4h-1.19).
- 4 Amelie Wuehrl et al. “What Makes Medical Claims (Un)Verifiable? Analyzing Entity and Relation Properties for Fact Verification”. In: *Proceedings of the 18th Conference of the European Chapter of the Association for Computational Linguistics (Volume 1: Long Papers)*. Ed. by Yvette Graham and Matthew Purver. St. Julian’s, Malta: Association for Computational Linguistics, Mar. 2024, pp. 2046–2058. [URL: https://aclanthology.org/2024.eacl-long.124](https://aclanthology.org/2024.eacl-long.124).

## Courses & Certificates

TensorFlow Developer	Introduction to Recommender Systems
Introduction to Deep Learning in Python	Big Data Processing, exploration with Scala and Apache Spark
Deep Learning in Python,	R Statistics Essential Training
Advance Deep Learning with Keras in Python.	Building Web Applications in R with Shiny Course
Learning TensorFlow with JavaScript	Data Analysis in R, the data.table Way
Building Deep Learning Applications with Keras 2.0	Statistics Foundations 1
Introduction to TensorFlow for Artificial Intelligence	Statistics Foundations 2
Introduction to Deep Learning with OpenCV	Statistics Foundations 3
Sequences, Time Series and Prediction	Design database MYSQL
Natural Language Processing in TensorFlow	Linux administrator
Convolutional Neural Networks in TensorFlow	Web Design Fundamentals
Custom Model, Layers, and Loss Functions with Tensor-Flow	Fundamentals Building Apps for Wearables
Natural Language Processing	Python programmer
Machine Learning for Marketing: Essential Training	Financial Markets
Artificial Intelligence Foundations: Thinking Machines	

## Languages

Spanish (Native),      English (Bilingual),      French (Advanced),      Italian (Basic),      German (Basic)

## Miscellaneous Experience

### Awards and Achievements

- 2021      –    CONAHCyT Scholarship – Full funding for Ph.D in Computational Linguistic.
- 2015      –    CONACyT Scholarship – Full funding for M.Sc. in Computer Science.

### Thesis Supervision

- 2023      –    **Master Thesis**, Plug and Play Domain Adaptation for Neural Machine Translation  
Emİls Kadiķis