



Machine learning researcher specializing in NLP and applied embedding methods, in the final stage of a Ph.D. and seeking to transition into an applied ML role in industry.

INFO & CONTACT

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🏠 [Rita González-Márquez](#)

EXPERTISE

Machine learning
NLP
LLMs
Agents
Text embeddings
RAG systems
Retrieval
Self-supervised learning
Contrastive learning
Neighbor embedding
Visualization methods

Rita Gonzalez Marquez

WORK EXPERIENCE

Ph.D. Researcher

04.2022 - present

Hertie Institute for AI in Brain Health

- Created an interactive visualization of 21 million scientific documents that allowed identifying unknown trends in the biomedical literature.
- Benchmarked and trained LLMs to embed texts for retrieval and other neighbors-based tasks.
- Estimated LLM-usage in scientific writing in biomedical literature using data-driven approaches.
- Taught the exercises of Neural Data Analysis and contributed to development of coding exercises.
- Supervised master thesis projects and mentored students.

Research Intern

04.2020 - 09.2020

Werner Reichardt Center for Integrative Neuroscience

Adapted existing dimensionality reduction methods to work with millions of text data samples.

Research Intern

02.2019 - 06.2019

Institute of Microelectronics of Sevilla (IMSE CSIC)

Studied semiconductor physics applied to CMOS-technologies.

EDUCATION

Ph.D. in Machine Learning, Informatics

04.2022 - present

*University of Tübingen,
International Max Planck Research School for Intelligent Systems*
Thesis: "Learning representations of scientific text data"

M. Sc. in Neural Information Processing

10.2019 - 12.2021

*University of Tübingen,
International Max Planck Research School*

GPA: 1.59

Thesis: "Two-dimensional visualization of document libraries"

B. Sc. in Physics

09.2015 - 07.2019

University of Sevilla, University of Münster

GPA: 1.43 (8.57 /10)

Thesis: "A study on fundamental physical limitations of CMOS technologies"

B. Sc. in Materials Engineering

09.2015 - 07.2018

University of Sevilla

Parallel studies, not finished



Rita Gonzalez Marquez

SCHOLARSHIPS AND AWARDS

Research Scholarship 09.2019 - 12.2019

University of Sevilla

Project studying the application of emerging nano-devices for visual processing.

Erasmus Program 09.2017– 08.2018

University of Münster

International mobility scholarship.

Matricula de Honor 07.2015

Sevilla, Spain

Highest grade in the Spanish secondary school diploma (Bachillerato), which included a tuition fee waiver for the first year of higher education.

Comenius Program 07.2015

Aydın, Turkey

Mobility scholarship for cooperation between European educational centers.

PUBLICATIONS

Holzwarth, **González-Márquez**, et al.
Most biomedical publications show signs of LLM-assisted writing.
Under revision, 2026.

González-Márquez, et al.
Cropping outperforms dropout as an augmentation strategy for training self-supervised text embeddings.
Transactions on Machine Learning Research, 2026.

Kobak, **González-Márquez**, et al.
Delving into LLM-assisted writing in biomedical publications through excess vocabulary.
Science Advances, 2025

González-Márquez, et al.
The landscape of biomedical research.
Patterns, 2024.

González-Márquez, et al.
Learning representations of learning representations.
ICLR Workshop DMLR, 2024.

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TECHNICAL SKILLS

Python
Pytorch
Scikit-learn
Matplotlib
Uv
Git + GitHub
Docker
LaTeX

LANGUAGES

English	<i>proficient</i>
German	<i>advanced knowledge</i>
Spanish	<i>native</i>

SKILLS

Communication
Ultra learning
Adaptability
Self-leadership
Managing resources