



# MATEO RUIZ ALVAREZ

**Address:** Hanstraße 21, 85057  
Ingolstadt, Germany  
**Phone:** +49 176 81262620  
**Email:** maruizal.syr@gmail.com

**Website:** <https://mateoruizal.com/>  
**GitHub:** [github.com/mateoruizal](https://github.com/mateoruizal)  
**LinkedIn:** [linkedin.com/in/mateoruizal](https://www.linkedin.com/in/mateoruizal)  
**Nationality:** Colombian

## PROFESSIONAL PROFILE

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AI & ML Engineer with a rigorous background in quantitative methods, optimization, and statistical modeling. Specializes in the development of scalable, multimodal AI systems and robust computer vision pipelines.

Experienced in extracting actionable insights from complex datasets in medical and business environments, now seeking to apply advanced computational methods to quantitative research challenges.

**Primary stack:** Python, R, SQL(MySQL), NoSQL (MongoDB), Google Cloud Platform (GCP), Tableau

## EDUCATION

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10/2023 - 04/2026  
Expected

### Master of Science in Artificial Intelligence

Friedrich Alexander Universität ([FAU](#)) | Erlangen - Nürnberg, Germany

- Relevant coursework: Pattern Recognition, Machine Learning (ML) for Time Series, Deep Learning, Advanced Topics in Deep Learning, Generative Models, Advanced ML for Anomaly Detection, Advanced Data Engineering, Reinforcement Learning, Probability & Stochastic Processes
- Master's Thesis (in cooperation with [UCLA](#)): "Machine Learning-based Recognition of Animal Vocalization (Pig Squeals)" - Supervision: Prof. Dr.-Ing. [Michael Döllinger](#) (FAU) and Prof. [Jennifer Long](#), PhD, MD (UCLA).
- Grade: 1.7

02/2012 - 07/2017

### Bachelor of Science in Civil Engineering

National University of Colombia ([UNAL](#)) | Medellin, Colombia

- Relevant coursework: Statistics, Linear Algebra, Advanced Mathematics
- Teaching Assistant: Integral Calculus, Basic Structural Design
- Grade: 4.5 (1.7 in German grading scale)

## WORK EXPERIENCE

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08/2025 - 02/2026

### Working Student Artificial Intelligence

Agentur Philipp GmbH - [agenturphilipp.de](https://www.agenturphilipp.de) | Dingolfing, Germany

- Managing the full lifecycle of computer vision models, from data labeling and training to production deployment.
- Developing and integrating multimodal AI architectures (LLMs, VLMs, Speech-to-Text, Text-to-Speech) into robotic and physical systems.
- Collaborating with software, AI, and product teams to align technical requirements and ensure seamless integration.

10/2018 - 11/2021

### Resident Engineer

SACYR: Engineering and Infrastructures - [sacyr.com](https://www.sacyr.com) | Medellin, Colombia

- Optimized tunnel construction workflows by analyzing material and labor datasets, resulting in a 5% reduction in overall production costs.
- Developed analytical reports on tunnel cycle times to identify bottlenecks, driving a 10% increase in production speed compared to peer teams.

08/2017 - 09/2018

### Junior Geotechnical Engineer

Soil and Rock Engineering | Medellin, Colombia

- Analyzed geotechnical datasets and automated report generation with Python and Excel, accelerating reporting by 10% with enhanced data visualization.
- Designed a semi-automated system for structural design and foundation drawing generation using Python, AutoCAD, and VBA in Excel, resulting in a 30% efficiency gain.

01/2017 - 07/2017

### Intern for the Engineering Team

ISAGEN: Productive Energy - [isagen.com.co](https://www.isagen.com.co) | Medellin, Colombia

- Developed an automated system in Python and ArcGIS for geotechnical data visualization from ISAGEN's hydropower plants, making information retrieval 20% faster.
- Automated geotechnical report generation in Excel using VBA, reducing report preparation time by 30%.

## SKILLS

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- **Programming & Math:** Python (Advanced), C++, R, MATLAB, SAS (Statistical Analysis System), Probability & Stochastic Processes, A/B Testing, Hypothesis Testing.
- **AI & Deep Learning:** Computer Vision (Segmentation, Object Detection), Multimodal Systems (VLMs, Speech-to-Text), LLMs & GenAI (RAG Architectures, OpenAI API, Ollama, LangGraph), PyTorch, TensorFlow, Keras.
- **ML Engineering & MLOps:** GCP (Google Cloud Platform), Model Lifecycle Management, ETL Pipelines, SQL, NoSQL (MongoDB), Spark, Git/GitLab, Data Labeling & Annotation.
- **Libraries & Tools:** Pandas, NumPy, Matplotlib, OpenCV, Scikit-learn, Spacy, FastAPI, Excel VBA, LaTeX, Tableau, PowerBI.

## ADDITIONAL INFORMATION

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- **Languages:** Spanish (Native), English (C1), German (A2).
- **Interests:** Stoic philosophy, Financial Machine Learning, running, meditation, journaling, cooking Colombian cuisine, volunteering.

30 January 2026

Mateo Ruiz A.