

# MATEO RUIZ ALVAREZ

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Engineer transitioning into Machine Learning/Data Science roles, currently pursuing a master's degree in Artificial Intelligence with a strong emphasis on computer science, maths and statistics. Acquired expertise in programming, applied machine learning, time series analysis and databases, with a focus on leveraging data-driven insights in the medical and engineering fields

## PROFESSIONAL EXPERIENCE

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### Resident Engineer

Sep 2019 - Nov 2021

SACYR: Engineering and Infrastructure | Medellin - Pamplona, Colombia

- Management of materials and labor used on site required for tunnel construction to ensure accurate billing and payment, reducing production costs by 5%.
- Led a team with 30 workers, achieving 5% higher production rate in comparison to other teams.

### Resident Engineer

Sep 2018 - May 2019

Eastern Tunnel Construction Company | Medellin, Colombia

- Ensured tunnel construction work was carried out according to the design and quality standards.
- Developed a semi-automatic report generator for detailed records of project progress using VBA, which reduced total process time by 15%.
- Led a team with 90 workers, achieving a 15% higher production rate compared to other teams performing similar tasks.

### Junior Geotechnical Engineer

Jul 2017 - Sep 2018

Soil and Rock Engineering | Medellin, Colombia

- Developed a semi-automatic system for structural design of foundations and plan drawing using Python, AutoCad and VBA in Excel, achieving a 30% increase in efficiency.
- Analysed geotechnical data and implemented a report generator with updated graphs utilizing Python and Excel, it allowed reports to be produced 10% faster.
- Led a team of 6 for geotechnical exploration in the field for a small hydroelectric plant, saving 10% of the initial stipulated cost.

## EDUCATION

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### M.Sc. Artificial Intelligence

Apr 2023 - Present

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

- Main Subject: Subsymbolic AI/Machine Learning - Minor Subject: AI in Biomedical Engineering
- Relevant Coursework: Pattern Recognition, Federated Learning, Machine Learning (ML) for Time Series, Knowledge Discovery in Databases, Deep Learning, Generative Models, Data Science Skills, Advanced ML for Anomaly Detection, Advanced Data Engineering, Reinforcement Learning,
- Cumulative GPA: 1.6

### B.Sc. Civil Engineering

Feb 2012 - Sep 2017

National University of Colombia | Medellin, Colombia

- Relevant Coursework: Statistics, Linear Algebra, Advanced Mathematics
- Teaching Assistant: Integral Calculus, Basic Structural Design

## SKILLS

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- **Programming Languages:** Python, C++, JavaScript, MATLAB, R
- **Big Data & Machine Learning:** Python (PyTorch, TensorFlow, Keras, scikit-learn, Pandas, Numpy, Matplotlib, OpenCV, Spacy), SQL, GCP, Spark, MongoDB
- **Data Science & Miscellaneous Technologies:** A/B testing, ETL, Data Science pipeline (cleansing, wrangling, visualization, modeling, interpretation), Statistics, Time Series, Hypothesis testing, OOP, OOD, APIs, Excel, Git, LaTeX, Jupyter Notebooks, GitLab

## ADDITIONAL INFORMATION

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- **Languages:** Spanish (mother tongue), English (B2), German (A1).
- **Certificates:** Mathematics for Machine Learning and Data Science | Coursera and DeepLearning.AI, Machine Learning Specialization | Coursera and Stanford University, PyTorch for Deep Learning Bootcamp | Zero to Mastery Academy
- **Interests:** Journaling, meditation, reading, sports enthusiast, latest technology trends, Colombian cuisine