# Juan Manuel Zapata

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## Professional Summary

Data Science Engineer with a strong foundation in Machine Learning (ML) and Deep Learning (DL), specializing in developing scalable solutions for big data processing and analysis. Proficient in LLM models and leveraging statistical techniques to drive impactful outcomes. Demonstrated success in optimizing algorithms, improving model performance, and delivering insights that supported decision-making across industries. Skilled in translating complex datasets into practical solutions that solve critical challenges.

## Skills

- Machine Learning & Deep Learning: Experienced in building models using TensorFlow, Keras, and Scikit-learn for predictive analytics and AI-driven solutions.
- Programming Languages: Advanced proficiency in Python and R, including libraries like Pandas and NumPy for data manipulation and analysis. Skilled in low-level programming with C/C++.
- Statistical Analysis: Expertise in Bayesian statistics and data structures for probabilistic modeling and algorithm optimization.
- Data Engineering: Skilled in designing and querying relational databases with PostgreSQL, and optimizing database performance.
- Recommender Systems: Hands-on experience in developing RecSys and custom algorithms for large-scale datasets.
- Computational Optimization: Proficient in enhancing performance of Deep Learning frameworks and computational workflows.
- Graph Analytics: Competence in graph-based analysis for network and relationship modeling.

## Education

**Pontifical Catholic University of Chile**, Bachelor in Data Science Engineering 2021 – 2024

- **Topics:** Data Science, Statistics, Machine Learning, Artificial Intelligence, Geospatial Analysis, Learning Algorithms.

## Experience

**AI Analyst**, Gather Consultores – Santiago, CL Oct 2023 – Present

- Developed applications integrated with Generative AI to optimize production tasks.
- Analyzed client datasets using Python and Pandas to extract actionable insights.

## Projects

**Identification and Recognition of Informal Settlements**

- Utilized low-resolution satellite images to identify informal settlements.
- Classified census blocks through clustering to determine sector ratings and potential expansions.

**Analysis and Pair Search of Users**

- Processed a database of tweets related to Chile's 2020 new constitution project.
- Developed a search algorithm to identify and classify users with similar posts.

**Identification of Human Resources Duplication**

- Designed an algorithmic scheme to identify duplicate projects in a public institution.
- Optimized evaluation criteria in co-financing processes, improving the accuracy and efficiency of application analyses.