

# Guillermo Aguilera

Mathematical Engineer

 +593 95 952 0546 [guillermoaguilera.71@hotmail.com](mailto:guillermoaguilera.71@hotmail.com)  Quito, Ecuador

 <https://www.linkedin.com/in/guillo667/>  <https://guillo667.github.io/>

## Profile

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I have a background in applied mathematics and computer science, focused on analysis, modeling, and problem solving. My experience combines academic research with the development of practical solutions in data science, optimization, and machine learning, using tools such as Python, R, and SQL.

I am highly interested in programming, machine learning techniques, and deep learning. I am looking for environments where I can apply and continue improving my knowledge.

## Work Experience

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### (Internship) Research Assistant *Université Gustave Eiffel*

**Paris, FR** 04/2025 - 08/2025

- Exploration of the theoretical properties of an approximation of the “bottleneck distance” through a softmax formulation.
- Python implementation of the aforementioned formulation using fractional linear models.

### (Permanent Contract) Information Dashboard Analyst *CRESA S.A.*

**Quito, EC** 02/2024 - 07/2024

- Creation of scripts for data cleaning, extraction, transformation, and analysis using R and SQL.
- Development of Power BI dashboards as decision-support tools. I worked on dashboards to monitor planting and harvesting status of a placement, out-of-stock situations, and credit risk.
- Analysis of credit scoring models for the prediction of defaulting customers.

### (Internship) Data Analyst *Construex*

**Quito, EC** 05/2023 - 08/2023

- Database management (Excel, Google Sheets).
- Report creation (Looker Studio).
- Development of web scraping scripts (BeautifulSoup).

### (Internship) Research Assistant *Escuela Politécnica Nacional*

**Quito, EC** 05/2023 - 12/2023

- Data analysis and cleaning (pandas, numpy).
- Support in the implementation of linear integer programming models (Python, Gurobi).
- Use of specialized software for electric bicycle vehicle routing (OSRM, Docker).

### (Internship) Assistant for the “Vinculación” Journal *Escuela Politécnica Nacional* **Quito, EC** 07/2022 - 08/2023

- Creation of a LaTeX template for the “Vinculación” journal and writing of several sections (LaTeX).
- Training a group of students in the correct use of the created template.

## Honors and Awards

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- Beneficiary of the international LabEx Bézout scholarship (2024).
- Silver Medal — National Mathematics Olympiad (OMEC) (2022).
- Gold Medal — National Mathematics Olympiad (OMEC) (2020, 2021).
- Bronze Medal — National Mathematics Olympiad (OMEC) (2019).

## Education

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### Master's Degree in Mathematics and Computer Science *Université Gustave Eiffel*

**Paris, FR** 2024-2025

- Combinatorics • Data Science • Linear Models • Topology

### Applied Mathematics *Escuela Politécnica Nacional*

**Quito, EC** 2018-2023

- Graph Theory • Statistics • Data Mining • Credit Models • Stochastic Processes • Linear Optimization • Actuarial Mathematics • Risk Models

## References

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- **Dr. Théo Lacombe:** theo.lacombe@univ-eiffel.fr (French, English) Supervisor of my internship at Université Gustave Eiffel.
- **MSc. Diego Castillo:** +593 98 703 7586 (Spanish, English) Head of the Business Intelligence department at CRESA.
- **Dr. Luis Miguel Torres:** luis.torres@epn.edu.ec (Spanish, English) Thesis advisor and Director of the research project carried out at EPN.

## Skills

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- **Python:** • Process automation scripts • Data cleaning, handling, visualization, and analysis (pandas, numpy, matplotlib, seaborn) • Machine learning models (scikit-learn) • Data acquisition through web scraping (BeautifulSoup, Selenium).
- **R Programming:** • Process automation scripts • Data cleaning, handling, visualization, and analysis (dplyr, tidyverse, ggplot).
- **Power BI:** Creation of metrics for interactive dashboards and report automation for decision making.
- **SQL:** Writing ETL queries and management of relational databases.
- **Office Pack:** Word (reports, correspondence), Excel (pivot tables, macros).
- **Git / GitHub:** Version control, project collaboration, and deployment of personal repositories.
- **LaTeX:** Preparation of academic documents.

## Languages

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- **Spanish:** native language.
- **English:** B2 level — full professional proficiency.
- **French:** B2 level — limited professional proficiency.