

Felipe Vaca-Ramírez
Researcher/Data Scientist
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BIO

I am a Data Scientist with 10 years of experience in data analysis and 5 years in academic research. During my PhD, I developed strong skills in analyzing, modeling, visualizing, predicting, and validating *networks* (graphs). A network represents a system made up of elements and their relationships, and they have many applications in real-world problems.

For instance, in the context of supply chains, these elements could be industries or warehouses, and the relationships could represent exchanges or the transportation of goods. By analyzing such networks, we can assess the vulnerability or resilience of the supply chain, identify potential weak points in the face of disruptions, simulate interventions, and uncover other relevant patterns.

In addition, I am familiar with methodologies for analyzing various types of data –cross-sectional, temporal, and spatial– which I have applied in previous roles as a data scientist and consultant for both public institutions and private companies.

Throughout my career, I have refined the ability to translate complex real-world problems into structured analytical projects. Furthermore, my experience teaching and presenting findings at conferences has contributed to communicate ideas clearly and meaningfully to different audiences. I place a strong emphasis on understanding both the capabilities and limitations of the tools I use, as well as ensuring the quality and integrity of the data I work with.

I have expertise in Python, R, and modern statistical and data science workflows.

EDUCATION

- PhD, Network & Data Science (2024). Central European University. Austria.
- M.S., Applied Mathematics (2015). Universidad San Francisco de Quito. Ecuador.
- B.S., Economics and Finance (2012). Escuela Politécnica Nacional. Ecuador.

WORK EXPERIENCE

- **Doctoral Researcher.** Central European University - Austria. 2019-2024.
 - **Data Science Consultant.** World Food Programme. Construction of indices and analysis of food security surveys. Implementation and analysis in R. June 2019.
 - **Data Science Consultant.** European Union Program of Co-operation with Ecuador. “A short-term forecasting model for consumer prices”. Implementation and analysis in R. May 2013 - June 2013.
 - **Data Science Consultant.** UNFPA-MCDS. Computation of migration indexes for SIMIGRACION Project. Analysis in STATA. October 2012 - November 2012.
 - **Data Scientist.** Ministry of Higher Education, Science, and Technology (SENESCYT). Analysis of educational and socioeconomic data for policy making. Analysis in STATA, SPSS and Microsoft Excel. May 2012 - October 2012.
 - **Data Scientist.** National Board of Higher Education Quality Assessment (CEAACES). Management and analysis of higher education data sets for policy making. Analysis in STATA, SPSS and Microsoft Excel. February 2012 - April 2012.
- ❖ For details on my research, talks, and taught courses, visit: <https://felipevacaramirez.github.io/>.

SKILLS

- **Computer Languages/Frameworks:** Python (scikit-learn, Pandas, NumPy, graph-tool, networkx), R, and QGIS (maps), Git (version control), Linux (servers and scientific clusters), SQL.
- **Languages:** Spanish (Native), English (Fluent), German (B2).