



Federico Castro, Ph.D.

DATA ANALYST

Mexico City, Mexico

fcastro.biol@gmail.com | [GitHub Page](#)

[ES](#) | [EN](#) | [DE](#) | [FR](#) | [JA](#)

## SUMMARY

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PhD-trained scientist specialized in data analysis and statistical modeling. Proficient in R programming and data visualization, with a strong record of interdisciplinary collaboration on complex data-driven projects. Author of peer-reviewed publications with experience across Europe and Asia. Comfortable working across a wide range of cultural and professional settings. Eager to apply quantitative expertise to advance evidence-based decision-making in industry.

## EDUCATION

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### Ph.D. in Biological Sciences

2014–2022 / Germany

FREIE UNIVERSITÄT BERLIN

### M.Sc. in Evolution, Ecology, and Systematics

2011–2013 / Germany

LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

### B.Sc. in Biology

2005–2011 / Mexico

UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

## RECENT WORK EXPERIENCE

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### Postdoctoral Researcher

2022–2024 / Mexico

BIOLOGY INSTITUTE, UNAM

- Conducted epidemiological and data-driven research using large-scale biological datasets.
- Applied advanced statistical modeling and predictive analytics in R to identify trends and correlations.
- Published findings in high-impact international journals.
- Collaborated with interdisciplinary teams across Europe and Latin America.

### Lecturer

2022–2024 / Mexico

POSTGRADUATE PROGRAM IN BIOMEDICAL STUDIES, UNAM

- Taught graduate-level courses in statistical analysis and data visualization using R.
- Supervised projects and mentored students on how to perform data wrangling and hypothesis testing.
- Oversaw data analysis projects, defining goals, deliverables, and review checkpoints.
- Developed course materials that integrated theory with applied case studies and real-world datasets.

## SKILLS

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**Core Analytical Skills** EDA | Modeling | Hypothesis Testing | Trend Analysis | Data Visualization

**Programming & Tools** R | Bash | Excel | SQL | Git

**Data Management** Data Cleaning | ETL | Database Querying | Reproducible Research | Dashboard Design

**Project Management** Scrum | Kanban

**Languages** Native: Spanish | Academic: English | Conversational: German, Japanese

## SELECTED PUBLICATIONS

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- Tracking *Batrachochytrium dendrobatidis* infection across the globe. [Link](#)
- Batrachochytrium salamandrivorans'* amphibian host species and invasion range. [Link](#)
- Crypticity in Biological Invasions. [Link](#)

# End-to-End Data Analysis

## From Raw Data to Insight

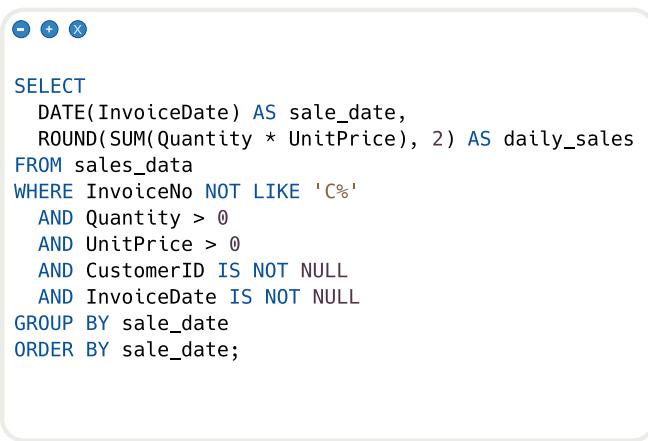
### Work Portfolio

Federico Castro, PhD

Data Scientist

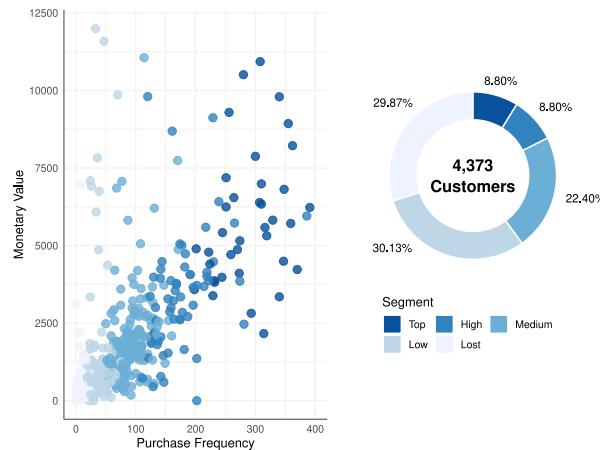
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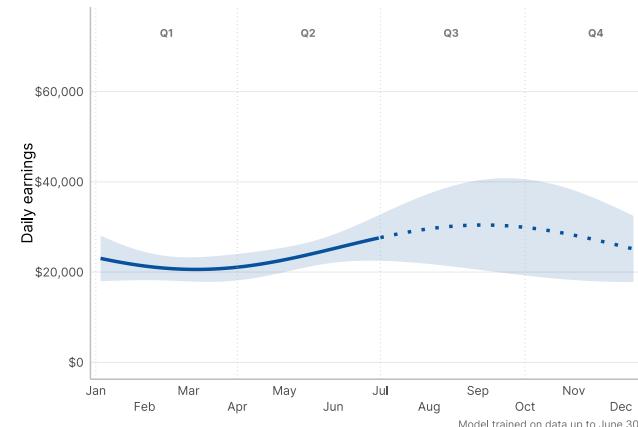
### SQL Data Wrangling

This SQL query aggregates valid daily sales while filtering out returns, nulls, and zero values to ensure clean, reliable data for analysis.



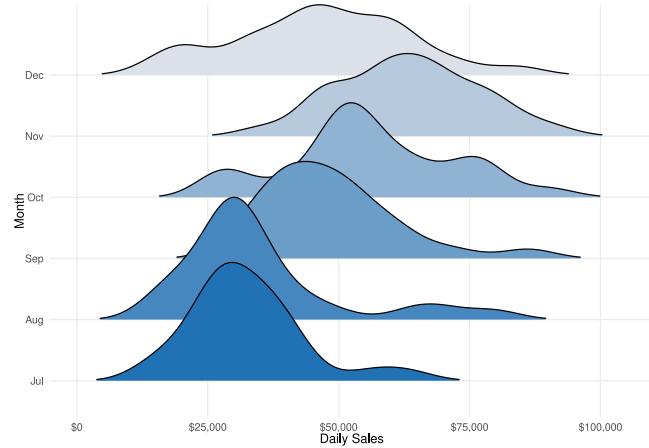
### Customer Segmentation (RFM)

Customers are segmented by Recency, Frequency, and Monetary value. The scatterplot shows behavioral clusters, and the donut chart visualizes their proportions.



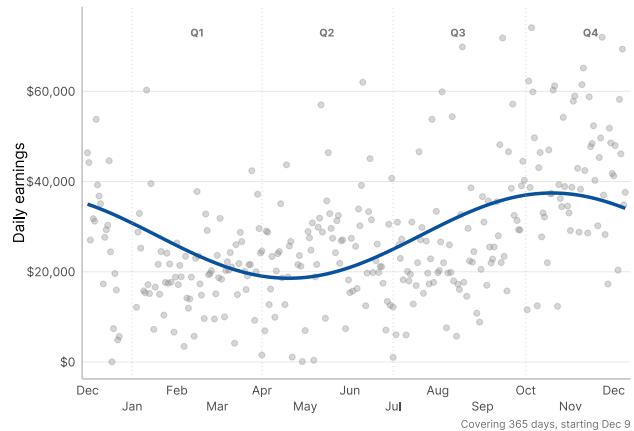
### Predictive Modeling & Forecast

A predictive model trained on Q1Q2 data forecasts Q3Q4 sales, providing forward-looking insights for inventory and marketing decisions.



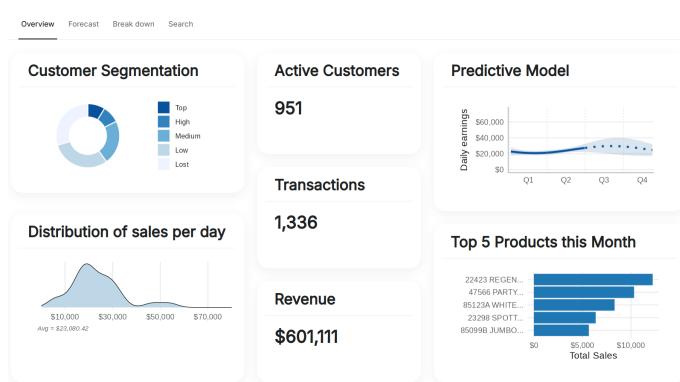
### Exploratory Data Analysis (EDA)

The ridge plot reveals monthly sales patterns, showing cyclical behavior and highlighting months with unusual spikes or dips.



### Explanatory Modeling

A regression model captures seasonal fluctuations, showing an upward trend during peak months and confirming recurring demand cycles.



### Interactive Dashboard

The interactive dashboard combines multiple analyses, enabling stakeholders to explore trends and uncover actionable insights.