



Federico Castro, PhD

DATA SCIENTIST

Mexico City, Mexico

fcastro.biol@gmail.com

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

## SUMMARY

---

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, adept at adapting to diverse environments. Eager to apply quantitative expertise to advance evidence-based decision-making in industry.

## EDUCATION

---

### FREIE UNIVERSITÄT, BERLIN

2014-2022 / Germany

PHD IN BIOLOGICAL SCIENCES

### LUDWIG MAXIMILIAN UNIVERSITÄT OF MUNICH

2011-2013 / Germany

M.Sc. IN EVOLUTION, ECOLOGY, AND SYSTEMATICS

### UNIVERSIDAD NACIONAL AUTÓNOMA DE MEXICO

2005-2011 / Mexico

BACHELOR BIOLOGICAL SCIENCES

## RECENT WORK EXPERIENCE

---

### 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 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

---

**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

---

- 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

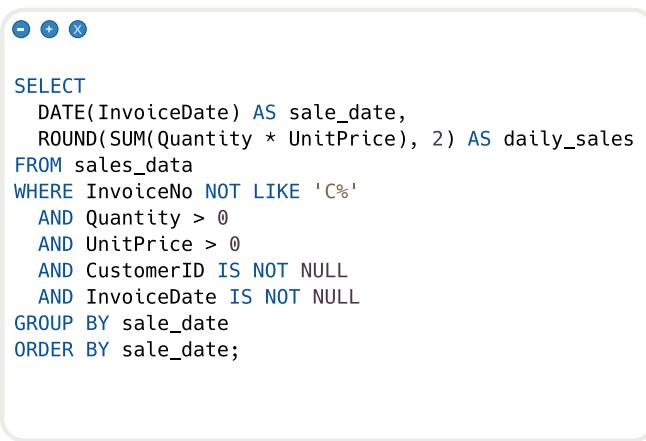
### Work Portfolio

Federico Castro, PhD

Data Scientist

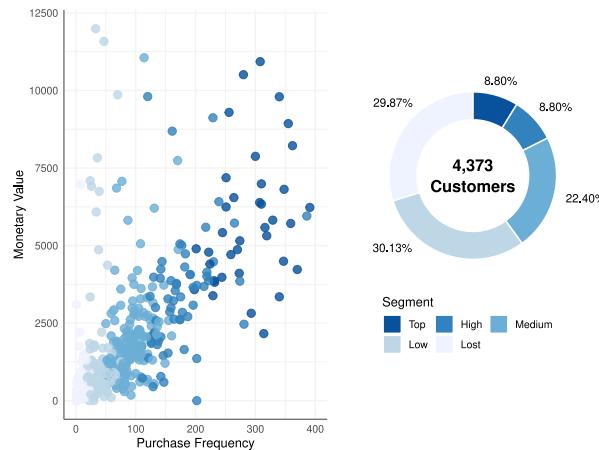
Mexico City, Mexico

fcastro.biol@gmail.com



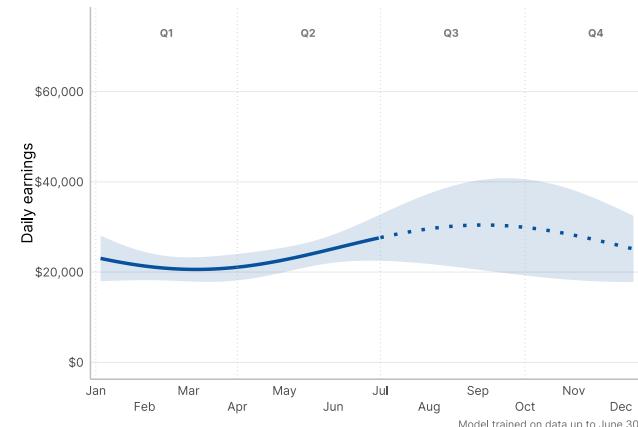
### SQL Data Wrangling

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



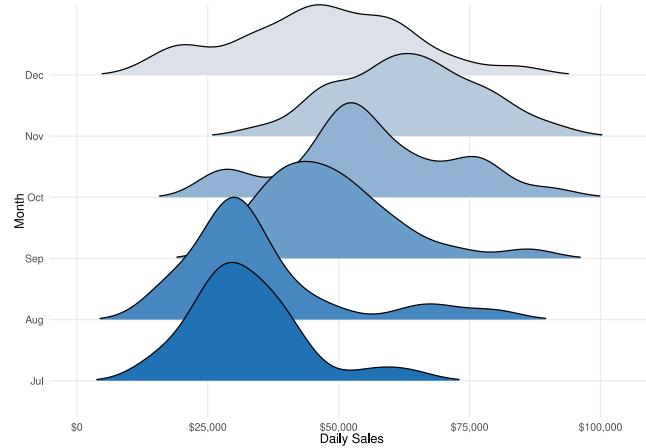
### Customer Segmentation (RFM)

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



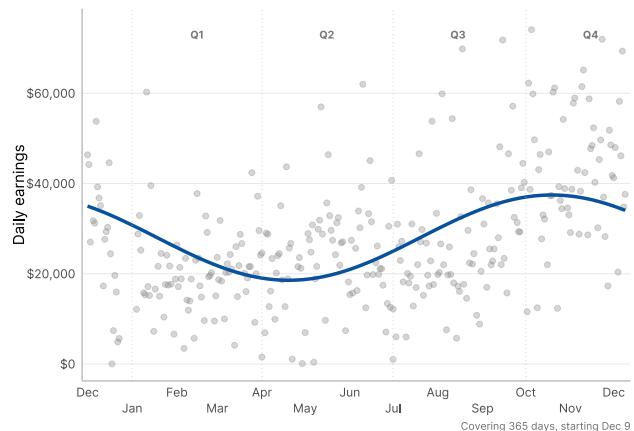
### Predictive Modeling & Forecast

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



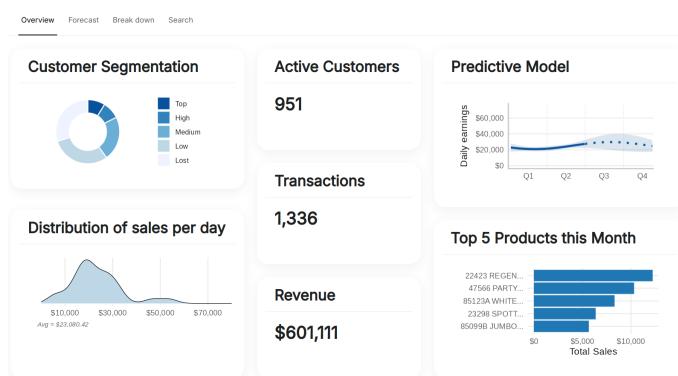
### Exploratory Data Analysis (EDA)

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.