

# FRANCISCO YIRÁ ALBORNOZ

## Data scientist and economist

Data scientist with background in economics and high proficiency in R programming. Skilled in applying machine learning techniques to optimise business outcomes in retail and marketing/CRM, as well as conducting statistical modelling and causal inference to answer business questions.

Experienced in automating processes and reports. Also proficient in Python for data analysis and model training. Passionate about leveraging data to enable data-driven decision making and to solve complex problems with social impact. Enthusiastic about learning new skills and sharing knowledge with others.



## FORMAL EDUCATION

2021  
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2020

- **University of Chile, Faculty of Economics and Business**  
Diploma in Applied Econometrics Santiago, Chile  
  
10-month program covering experimental design, causal inference with observational data and time series analysis.

2018  
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2017

- **Pontifical Catholic University of Chile, Faculty of Engineering**  
Diploma in Big Data Santiago, Chile  
  
144-hour program covering the fundamentals of machine learning, recommender systems, Hadoop, parallel computing and graph theory.

2015  
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2010

- **University of Chile, Faculty of Economics and Business**  
B.S. in Economics Santiago Chile  
  
Graduated with distinction. 5-year program.



## PROFESSIONAL EXPERIENCE

2022  
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Present

- **Data Scientist, Marketing**  
MACH (Fintech) Santiago, Chile
  - Used Apache Airflow to develop an analytical asset that triggered proactive retention initiatives when a significant drop in transaction frequency was detected.
  - Proposed and implemented an experimentation framework for A/B testing best practices.
  - Trained predictive machine learning models using AWS cloud infrastructure (SageMaker, Athena and Glue) and PySpark.
  - Evaluated the causal impact of referral campaigns using Matching when the use of randomised control groups was not feasible.

2021  
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2020

- **Data Scientist, Marketing**  
WOM S.A. (Telecommunications) Santiago, Chile
  - Used interpretable modeling techniques and unsupervised learning to guide the prioritisation of network infrastructure deployments. The resulting insights were made available to stakeholders via interactive reports, using packages such as `flexdashboard` and `plotly`.
  - Trained predictive models with the ML framework H2O to better target potential customers through call centre campaigns.
  - Performed impact evaluations of network investments using A/B testing, differences in differences, and matching.

## CONTACT AND MORE

[Portfolio website](#)  
 [Data science blog](#)  
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## SKILLS

Highly proficient in R programming, using various packages such as tidyverse and rmarkdown. Skilled in creating data visualisations and communicating complex ideas in a clear and concise way.

Experienced and proficient in SQL, Python, Git, statistical analysis, machine learning, causal inference and experimental design (A/B Testing).

Familiar with Apache Airflow, PySpark and the AWS ecosystem and tools.

*Last updated in April 2023.*

- 2019  
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2018

● **Data Scientist, Marketing**  
Walmart (Retail) 📍 Santiago, Chile

  - Developed data transformation processes and implemented machine learning models that allowed the deployment of a personalized marketing strategy for the company's most important local brand. This included the development of churn models and clustering on transactional data.
  - Led the development of an internal R package aimed at streamlining processes and accelerating deliveries in our area.
  - Led the impact evaluation of the personalised marketing project by designing, implementing, and supervising A/B tests, in close collaboration with the CRM Ops team. This included devising solutions for increasing statistical power in contexts of small treatment effects.
- 2018  
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2017

● **Data Analyst, Marketing**  
Walmart (Retail) 📍 Santiago, Chile

  - Gave answers to business questions from Walmart merchants and the marketing team by integrating multiple data sources with R and SQL, and by applying statistical modelling, econometrics and data visualisation techniques.
  - Automated ad-hoc reports by using parametrised R Markdown documents.
  - Improved the impact evaluation of key company decisions by incorporating causal inference methodologies in otherwise descriptive analyses.
- 2017  
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2015

● **Trainee, Public Sector Sales team**  
Oracle (Software and IT) 📍 Santiago, Chile

  - Supported my sales team by automating reports with VBA.
  - Kept track of sales opportunities KPIs.
  - Demoed Oracle products to government clients.
  - Developed a market study about innovative ways to sell Oracle products.



## CREDENTIALS AND MORE EDUCATION

- 2022

● **AWS Cloud Practitioner Certification**  
AWS Training & Certification

  - Earned an industry-recognized credential that validates foundational understanding of AWS Cloud concepts, services, and terminology. Demonstrated knowledge of cloud economics, security, architecture, and support models



## CONTRACT AND SELF-LEARNING PROJECTS

- 2022

● **Optimisation of digital advertising budgets through statistical modelling**  
Marketing Advance (Digital Marketing start-up) 📍 San Francisco, US (Remote)

  - Optimised budget allocation and estimated Return-of-investment metrics for digital advertising channels by performing Marketing Mix Modelling with Meta's ['Robyn'](#) R package.
- 2022

● **Shiny app deployed on AWS tracking the Twitter presence of Chilean constituents**  
Self-learning project

  - An app built with R's [shiny](#) and deployed to AWS EC2 that automatically retrieves and visualises the most liked and RT'd tweets from the Chilean politicians who drafted the 2022 constitution proposal.

- 2022 ● **Causal Inference with R (blog posts series)**  
Self-learning project
  - A series of articles in which I explain key causal inference concepts and methodologies in simple terms and with lots of code examples and visualisations.
- 2021 ● **Analysing my music collection with Python and R**  
Self-learning project
  - An analysis I did to practice Python skills. It involved importing and transforming XML data and performing data wrangling and visualisation.
  - I also combined Python and R code through the `reticulate` package to leverage the R visualisation capabilities on top of the `pandas` data pipeline.
- 2020 ● **Data collection for a survey of higher education institutions**  
Ministry of Education, Chilean government 📍 Santiago, Chile
  - Developed R scripts to automatically create custom forms for each higher education institution, and then consolidated the completed forms into a single dataset by using Python scripts.
- 2017 ● **BI Dashboards development**  
KMA Asset (Real estate investment trust) 📍 Santiago, Chile
  - Developed R scripts to automatically consolidate data from multiple CRM sources.
  - Developed dashboards in Power BI on top of that data to enable analysis and monitoring of business metrics (conversion KPIs, customer acquisition cost, etc).



## PUBLICATIONS AND PRESENTATIONS

- 2019 ● **alicer: An internal R package to accelerate Walmart Chile analytics**  
LatinR: Latin American Conference on the Use of R in Research + Development.  
Presentation on our success case at Walmart developing R packages to accelerate workflows in the marketing analytics team.
- 2017 ● **Have America's political parties lost control over their presidential nominations? (Spanish)**  
University of Chile's academic repository.  
*Undergraduate thesis for Economics major.* A statistical analysis of the factors that drive presidential nominations in the US political system, expanding on 'The Party Decides' (M. Cohen, 2008) by leveraging new data and the Chow structural break test.



## LANGUAGES

- **English**  
Fluent. IELTS Band 8.0.
- **Spanish**  
Native speaker.
- **French**  
Basic user (A2).