Alonso Valdés González

Data Scientist | Economist | Data Visualization Developer
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Professional Summary

Data Scientist with over 6 years of experience in data analysis, econometrics, and underlying interactive application development. Expert in building predictive models and advanced data visualization using technologies such as Python, SQL, Dash, Flask, and Docker. Focused on process optimization, scalable solution deployment, and real-time data-driven decision-making. Extensive experience in macroeconomic analysis and financial scenario forecasting. Seeking opportunities where I can apply my expertise in **Machine Learning**, **Big Data**, and **Data Visualization**.

Professional Experience

Data Scientist and Application Developer
*Lentisco – Madrid, Spain | **March 2024 – Present***

- Developed an interactive web application using **Dash** and **Flask** for visualizing large volumes of data, optimizing browser performance through advanced metadata management.
- Implemented significant improvements to the user interface, utilizing advanced **dash-bootstrap-components**, including horizontal design, floating labels, and smooth transitions.
- Optimized data loading times, achieving a reduction in response times through Redis cache implementation.
- Integrated dynamic filters with a modern design, improving user experience in terms of usability and smoothness.
- Technologies: **Python, Dash, Flask, Docker, MariaDB, ElasticSearch, FastAPI, Plotly, SQL, Playwright, GitHub, Redis, Pydantic, OpenAI API, Docling, Streamlit, Beautiful Soup, Numpy, Pandas, n8n, Supabase**.

Master's Final Project: Predictive Model and Web Application Developer
*Complutense University of Madrid – Madrid, Spain | **2023 – 2024***

- Developed a predictive model for housing prices in Spain using **Machine Learning** techniques (Random Forest) and data obtained via **web scraping** from platforms like Pisos.com and Trovit.
- Deployed an interactive application with **Streamlit** and **Docker** containers, allowing users to make real-time personalized predictions about housing prices.
- Integrated data from **OpenStreetMap** to enhance predictions with nearby Points of Interest (POIs), improving prediction accuracy by 20%.
- Technologies: **Python, Scikit-Learn, Docker, Streamlit, PostgreSQL, Numpy, Pandas, Optuna, Selenium, Beautiful Soup, Folium, GitHub**.

Data Scientist Analyst | Actuarial Analyst
*Budget Office of the Ministry of Finance – Santiago, Chile | **2021 – 2023***

- Conducted actuarial studies, long-term fiscal policy calculations, particularly for Pension Reform.
- Microsimulated the labor trajectories of the Chilean economy for long-term pension calculations.
- Developed stochastic projection models to analyze the sustainability of the **Pension Reserve Fund**, using **Monte Carlo** simulation techniques.
- Evaluated the impact of the COVID-19 Employment Protection Law through **propensity score matching** and **probit** models to measure the relationship between employment coverage and pension contributions.
- Drafted financial reports for legislative projects and internal and public studies.
- Worked with databases from the **Unemployment Insurance** and **Pension Data System**.

- Technologies: **Python**, **Stata, Numpy, Pandas, Sci-kit Learn, Matplotlib, Excel VBA, Statsmodels, Beautiful Soup**.

Macroeconomic Analyst
Budget Office of the Ministry of Finance – *Santiago, Chile | 2018 – 2020*
- Performed advanced macroeconomic analysis and contributed to key reports, such as the **Structural Balance** and the **Quarterly Public Finance Report**.
- Automated budget execution reports and analyzed revenue and expenditure projections for the **Central Government**.
- Evaluated the fiscal impact of legislative projects, such as the **Tax Reform**, using econometric models and fiscal scenario projections.
- Technologies: **Python**, **Stata**, **Excel VBA**.

Education
Máster en Data Science, Big Data & Business Analytics
Complutense University of Madrid – Madrid, Spain | 2023 – 2024
Master's in Economics
Adolfo Ibáñez University – Santiago, Chile | 2016 – 2017
Bachelor's in economics
Adolfo Ibáñez University – Santiago, Chile | 2012 – 2015

Skills
- **Data Analysis and Web Scraping**: Stata, Numpy, Pandas, Beautiful Soup, Playwright, Selenium, Statsmodels, n8n.
- **Machine Learning Frameworks and Libraries**: Scikit-Learn, PyTorch, TensorFlow, Optuna, HuggingFace, Dash.
- **Data Visualization**: Plotly, Streamlit, Dash, Folium, Matplotlib, Seaborn, P5.js, D3.js.
- **Application Deployment and Management**: Docker, Flask, PostgreSQL, GitHub Actions.
- **Office Suites**: MS Office (Advanced VBA), LaTex.
- **Teamwork, Adaptability, and Problem Solving**: Multidisciplinary teamwork, effective data presentation and analysis communication.
- **Languages**: Spanish (native), English (C1 level), learning Portuguese and French.

Certifications and Recognitions
TOEFL iBT 77 pts. (B2) 2023 - **EF Set** 71 pts. (C1) 2022 - **TOEIC** 810 pts. (B2) 2015
Machine Learning - PH125.8x: Data Science: Machine Learning, edX - Harvard University

Second Place in the Pro Scholarship – Master's Final Project Competition, Complutense University of Madrid – 2024
Awarded for the development of a predictive model for housing prices and its deployment in an interactive web application using **Streamlit** and **Docker**. The project stood out for its precision, industry impact, and the use of advanced **Machine Learning** techniques.

Publications
- "Long-term Fiscal Revenue Estimation 2020-2060". 2021. Dipres.
- "Research Note: Treatment of Temporary Reversible Tax Measures in the Structural Balance Calculation", Ministry of Finance, Chile, 2020.
- Cyclically Adjusted Balance Indicator, Methodology and Results 2019. June 2020.
- Research Note: Cyclical Adjustment of Fiscal Revenues from Copper: Evaluation and Proposals. 2019. Dipres.
- Cyclically Adjusted Balance Indicator Methodology and Results 2017. June 2018.