FRANCISCA C. GONZÁLEZ MONREAL

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SUMMARY: Widely experienced expert in quantitative analysis and programming with a strong record of tackling challenges and driving impactful, enduring solutions; highly skilled in managing complex projects from concept to completion, bridging communication between economists and quantitative experts and ensuring robust, user-friendly solutions; bilingual in English and Spanish and able to adapt to different work environments

EXPERIENCE

PACIFICO RESEARCH, Santiago, Chile   07/21 – Present
Quant Developer, Quantitative Analyst
Inflation Forecasting Model
● Led development and usage of a stochastic process forecasting model in Python for each CPI product, aggregating individual forecasts into an overall CPI outcome. Scalable model eliminated the need for direct macroeconomic input
Automated Reporting Tool
● Created an internal library for report generation using company's API, Bokeh, and other Python libraries, for data visualization and centralizing plotting and table designs, reducing development and runtime for executing reports
Term Premium Model Implementation
● Directed implementation of a term premium model for swap yield curves, a key input for rates reports; solution streamlined acquisition for macroeconomic team, enabling faster rates projection and pioneering a viable product for Colombia
Data Integration via Web Scraping
● Developed Python-based web scrapers to automate data collection from government and public sources, seamlessly integrating this information into the Pacifico API for enhanced analysis and reporting
● Experiments helped Pacifico automate its processes and retire obsolete code, enhancing product scalability for all target markets, reducing costs and time, and expanding the client base
Portfolio Backtesting Platform
● Built backtesting framework for portfolio combinations, analyzing key performance metrics (e.g., drawdown, returns, Sharpe ratio) and providing a centralized structure that enabled the investment team to optimize strategies efficiently
Market Analysis and Insights
● Produce weekly market analysis, presenting actionable insights, supporting informed decision-making with timely financial data
● Instrumental in launching a new investment division, empowering clients without financial background to expand their portfolios and build lasting wealth

RESEARCH & ACADEMIC PROJECTS

UNIVERSIDAD ADOLFO IBÁÑEZ, Santiago, Chile
Thesis: Measurement of the Impact on Housing Prices Due to the 2014 Tax Reform,   01/21-01/22
● Analyzed Chile's 2014 VAT reform impact on Santiago real estate (2012–2019 data) using a difference-in-differences model, finding a 14% price increase for taxed properties with full tax pass-through
Volatility model calibration with USDGBP options data,   07/20 - 09/20
● Implemented a Hull-White stochastic variance model in MATLAB using Monte Carlo and bootstrapping, with parallel programming and variance reduction techniques achieving a 0.5% average volatility error over 3 years

EDUCATION

UNIVERSIDAD ADOLFO IBÁÑEZ, Santiago, Chile
Master of Science in Financial Engineering, 2022
Relevant Courses: Option pricing and Numerical methods, Interest rate derivatives and models, Empirical Finance, Risk Management
Bachelor of Science in Civil Engineering, 2019
Relevant Courses: Multivariable Calculus, Linear Algebra, Differential Equations, Probability and Statistics
Certifications: C++ Programming for Financial Engineering, CS50 Intro to Computer Science (C/C++)

HONORS & AWARDS

European Innovation Academy, Top 10, 2019. Over a 3-week startup accelerator, my team and I developed Home2Home, a platform connecting international students with suitable housing
Best Project (Building robot), Universidad Adolfo Ibáñez, 2016. During a two-month project, my team and I built a stingray-inspired robot capable of advancing along the water's surface and turn
Scholarship, Universidad Adolfo Ibanez, 2016-2020

SKILLS

Computer: Python, C/C++, Excel, LaTeX, MATLAB, R, VBA, SQL
Soft Skills: Adaptability, Team Player, Effective Communication

EXTRACURRICULAR ACTIVITIES

● Student Council Executive Board, Treasurer, 2019
● Teaching Assistant, Microeconomics and Fluid Mechanics, Universidad Adolfo Ibañez, 2018-2019