

# Matias P. Borghi Orue

QUANTITATIVE ANALYST · MSc. PHYSICS

Av. Cordoba 6570, Chacarita, 1427, Cap. Federal, Buenos Aires, Argentina

☎ (+54) 9 11-2157-6504 | ✉ borghi.matias@gmail.com | 🏠 mattborghi.github.io | 📷 mattborghi | 📺 borghimatias

## Summary

Hello! I'm Matias, a Quantitative Analyst with 6+ years of experience based in Buenos Aires, willing to relocate abroad. I am a physicist interested in tackling challenging analytical problems using computational tools.

## Work Experience

### Crisil Limited

Buenos Aires, Argentina

SR. QUANTITATIVE ANALYST

Jun. 2021 - Present

- Consultant for Tier-1 US investment bank in the Wealth Management Division.
- Working with a vendor (third-party) model that uses deep learning techniques in order to price stocks and gain insight into portfolio management investing.
- Responsible for creating technical documentation.
- Creation and execution of Benchmarking Analysis, Back testing, Stress Tests and Stability tests, among others.
- Engage on model presentations and Weekly discussions with vendor and bank developers.

### Crisil Limited

Buenos Aires, Argentina

QUANTITATIVE RESEARCHER

Mar. 2019 - May. 2021

- Working in a R&D team in the development of a high-performance library designed to achieve fast and advanced quantitative finance calculations, including: Monte Carlo universal pricing engine for exotic equity products; Greeks computation via automatic differentiation; domain specific language (DSL) design and implementation for syntactically-sweetened inputs.
- Development of cutting edge Machine Learning and Deep Learning solutions for pricing products with early exercise features in both high and low dimensions.
- Technical leader in charge of the development, maintenance, testing, documentation and deployment of web applications using high standards for microservice deliveries, including: frontend development; backend development; GraphQL API endpoints; documenting solution architecture; automated cloud migration environments.
- Responsible for creating a rapidly working prototype by designing the frontend interface using React.js and communicating via GraphQL APIs to a Django backend that consumes Julia workers.
- Presentation of technical features to senior management.

### Crisil Limited

Buenos Aires, Argentina

QUANTITATIVE ANALYST

Aug. 2017 - Feb. 2019

- Consultant for Tier-1 US investment bank - Equity and Hybrids Group. Front Office.
- Pricing and Risk Management Equity and Hybrid (IR/FX/COMM) exotic financial derivative models for a Tier-1 US Investment Bank.
- Responsible for creating technical documentation and generating executive summary reports in  $\text{\LaTeX}$ .
- Scrutiny of pricing methodology, model soundness and test suite design. Creating and executing calibration, benchmarking, computational performance, hedging, limiting cases, stability and convergence tests using C#/Excel. CCAR stress testing and PAA explains.

### Institute of Physics of Liquids and Biological Systems

La Plata, Buenos Aires, Argentina

PHYSICIST

Aug. 2016 - Aug. 2017

- MSc. in Physics graduate dissertation: Study of phase transitions of an Ising-type model with spin oriented dependent interaction parameters.

### National University of La Plata (UNLP)

La Plata, Buenos Aires, Argentina

TEACHING ASSISTANT

Sep. 2015 - Sep. 2017

- Responsible for teaching fundamental physical concepts such as Classical Mechanics and Electromagnetism to undergraduate students.

### Argentine Institute of Radio Astronomy (IAR)

Berazategui, Buenos Aires,  
Argentina

RESEARCH PROJECT COLLABORATOR

Nov. 2014 - Dec. 2015

- Responsible for the development of a library which could determine the possibility of radio emission detections from extensive air showers induced by cosmic rays.
- This work was presented as a poster at the 100th Annual meeting of the *Argentine Physics Association* (AFA) from the 22nd to 25th of September of 2015 in Villa de Merlo, San Luis, Argentina.

## Education

### National University of La Plata (UNLP)

La Plata, Buenos Aires, Argentina

MSc. IN PHYSICS

Mar. 2010 - Aug. 2017