

Matias P. Borghi Orue

FULL-STACK DEVELOPER · MSc. PHYSICS

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Summary

Sr. Quantitative Analyst with 4+ years of experience in the Finance Industry, working as a consultant for Tier-1 US Investment Banks as well as in a project for a R&D team. Accountable, inquisitive, teamwork player looking for new challenges.

Passionate about coding and technology I am looking at working full-time as a full-stack developer.

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 and stability tests, among others.
- Engage on weekly model updates and discussions with vendor and bank associates.

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.
- Preparing presentations of technical advances to senior management.

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 \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.

Institute of Physics of Liquids and Biological Systems (IFLySiB)

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 software package that assess 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.

Projects

Background Tasks Queue

Jan. 2021

- Project implementing a background tasks/jobs queue with React as frontend, Python (Django) to process the requests and Julia to run the jobs communicating using RabbitMQ.
- Deployed using Heroku, GitHub pages and CloudAMQP.

Julia Editor on the Web

Feb. 2021

- A minimal working project that handles Microsoft's Monaco Editor on the web with Julia's syntax highlighting and a dedicated Julia Language Server that allows a certain user to have full access to package documentation, suggestion and snippets, among other things.
- Built using React.js, Node.js and Julia.

Julia Terminals on the Web

Mar. 2021

- A minimal working project that handles multiple pseudoterminals running Julia on React. It's UI design is based on VSCode and Atom IDEs.
- Built using React.js, Node.js and Julia.

Education

National University of La Plata (UNLP)

La Plata, Buenos Aires, Argentina

MSC. IN PHYSICS

Mar. 2010 - Aug. 2017