Matias Borghi

Online Résumé
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Professional Experience

CRISIL an S&P Global Company
Sr. Quantitative Analyst

Jun 2021 – Present
Buenos Aires, AR

> Validation and documentation for a vendor model that uses deep learning techniques in order to price stocks/ETFs and gain insight into portfolio management investing.

> Responsible for creating technical documentation and generating executive summary reports in LaTeX. Creation and execution of Benchmark Analysis, Back testing, Stress Tests and Stability tests, among others.

CRISIL an S&P Global Company
Quantitative Researcher

Mar 2019 – May 2021
Buenos Aires, AR

> 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.

CRISIL an S&P Global Company
Quantitative Analyst

Aug 2017 – Feb 2019
Buenos Aires, AR

> 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. Creation and execution of Benchmark, Limiting Cases and Stability tests, among others.

> **Technologies used**: Mainly working with Excel and C♯.

Institute of Physics of Liquids and Biological Systems
Physicist

Aug 2016 - Aug 2017
La Plata, Buenos Aires, AR

> 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)
Teaching Assistant

Sep 2015 – Sep 2017
La Plata, Buenos Aires, AR

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

Argentine Institute of Radio Astronomy (IAR)
Research Project Collaborator

Nov 2014 - Dec 2015
Berazategui, Buenos Aires, AR

> 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 100 Annual meeting of the *Argentine Physics Association* AFA from 22 to 25 of September 2015 in Villa de Merlo, San Luis, Argentina.

> **Technologies used**: Mainly C++ and R.

🎓 Education

National University of La Plata (UNLP) 🌐   2010 – 2017
MSc. in Physics   *La Plata, Buenos Aires, AR*

San Juan XXIII High School 🌐   2007 – 2009
Computer Technician   *Ramos Mejia, Buenos Aires, AR*

⚗ 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 thigns.
> 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.

Hexapod Robot 🔗   Nov 2009
> This project was done with my brother during my last high school year and was presented during the annual 2009 science fair.
> It consisted in creating the whole robot chassis and simulating its movements for each one of its 18 servomotors.
> The project was awarded the 2nd place for best high schools projects at the National University of La Matanza UNLAM.

📕 Languages

Spanish Native
English Professional
French Intermediate