Matias Borghi

Online Résumé
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Professional Experience

CRISIL an S&P Global Company
Mar 2019 – Present
Quantitative Researcher — *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
Aug 2017 – Feb 2019
Quantitative Analyst — *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
Aug 2016 - Aug 2017
Physicist — *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)
Sep 2015 – Sep 2017
Teaching Assistant — *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)
Nov 2014 - Dec 2015
Research Project Collaborator — *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 to process the requests and Julia to run the jobs communicating using RabbitMQ.
- Deployed using Heroku, GitHub pages and CloudAMQP.

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