



Alvaro Diego

Data Scientist

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Programming

Python	5+ yrs.
SQL	3+ yrs.
C, C++	10+ yrs.
Java, C#	5+ yrs.

Technologies

Jupyter	5+ yrs.
Spark	2+ yrs.
Excel	10+ yrs.
Dash, Plotly	1 yrs.
Power BI	1 yrs.

About

I am a data scientist with background as an experimental physicist and extensive experience in data treatment and data analysis applied to complex research. My current projects are aimed to the field of data science employing machine learning and statistical methods, that can be useful for scientific investigation, business solutions and project finance.

I am fluent in several programming languages including Python, SQL, C++ and Java. During my 10+ years of experience, I employed programming skills to build automation processes, advanced mathematical models and data analysis using machine learning methods.

My latest projects involved the development of time series models for forecasting fuel demand and demand for underground trains in the metropolitan transport system of the city of São Paulo/Brazil.

Experience

Radix Engineering & Software

2023 - Today

Data Scientist

- Time series modeling for fuel and metro trains demand.
- Forecasting and anomaly detection
- Accuracy analysis in demand forecasts for business decisions.
- Model performance explainability.
- Railway Technology and Development Award for innovative work.

Self employed

2021 - 2023

Data Scientist consultant

- Exploratory data analysis.
- Implementation of machine learning methods for business.
- Creating dashboards for data reporting and forecasting for business decisions.

Paternity leave

2020 - 2021

Full time father

- Caring for my son in the hope of a better world.

PhD Researcher

2017 - 2019

Universidade de Brasilia, Brasilia, Brazil

- Spearheading of scientific projects related to manufacture of organic solar cells.
- Software engineering in data acquisition automation.
- Acquisition and analysis of performance data of the organic solar cells response.
- Optimization of procedures for manufacturing quantum devices.

Project Manager

2017 - 2018

NowGo Energy, Brasilia, Brazil

- Team leader of projects related to the feasibility study and installation of solar power plants.
- Project finance of the feasibility of the power plant.
- Performance simulation and capacity factor.
- Simulation of company structure and business risks.
- Business intelligence.
- Costs, revenues and taxation.

Git 4+ yrs.

Skills

Mathematics 10+ yrs.

Statistics 10+ yrs.

Physics 10+ yrs.

Machine Learning 5+ yrs.

Languages

Portuguese

English

German

French

PhD Researcher

2014 - 2016

Alcatel Thales III-V Lab, Alcatel, Paris, France

- Spearheading of scientific projects related to the manufacture of devices for world wide communication.
- Manufacture of lasers and optical modulators.
- Mathematical and statistical modeling.
- Exploratory data analysis from experimental data from several sources.

PhD Researcher

2014 - 2016

Sorbonne Université Campus Pierre et Marie Curie, Paris, France

- Spearheading of scientific projects related to the mathematical modeling of the manufacture of lasers and optical modulators.
- Acquisition and analysis of performance data of lasers and optical modulators.
- Optimization of procedures for manufacturing quantum devices.
- Software development.

PhD Researcher

2013 - 2014

Pontifícia Universidade Católica do Rio de Janeiro, PUC-Rio, Rio De Janeiro, Brazil

- Spearheading of scientific projects related to the manufacture of quantum devices.
- Mathematical and statistical modeling of the device performance.
- Exploratory data analysis from several source of formats of data.
- Software engineering in data acquisition automation.

Awards

10th Prêmio Tecnologia & Desenvolvimento Metroviários

2023

São Paulo, Brazil

Title: Optimising the efficiency of the metro rail system: operational analysis with data science.

Relevant Coursework: Data acquisition, data processing, structuring of cloud service, data analysis, development of methodology for passenger load sizing, time series models, pipeline deployment.

Links:

- Event website.
- Certificate.

Education

PhD in physics

2007 - 2012

Universidade de São Paulo, USP, São Paulo, Brazil

Title: Growth, fabrication and test of quantum dots infrared photodetectors.

Relevant Coursework: Quantum devices fabrication, Software engineering, Systems automation, Data Acquisition, Data analysis, Software Development, Physics, Math, Statistics.

Master's degree in physics

2005 - 2007

Universidade de São Paulo, USP, São Paulo, Brazil

Title: Spin Effects in Wide Quantum Well.

Relevant Coursework: Data Acquisition, Data analysis, Software Development, Physics, Math, Statistics.

Undergraduate Physics

2001 - 2005

University of Brasilia, Brasilia University, Brasilia, Brazil

Relevant Coursework: Data Acquisition, Data analysis, Software Development, Physics, Math, Statistics.

Projects

Data Scientist and Machine learning

2020 - Today

- Creation and implementation of Machine Learning models.
- Developing visualization dashboards for data reporting.

Gaming

2015 - Today

- Creating devices for sim racing.
- Arcade machine cabinets for fighting game community.
- X-input pinball controller with motion control.

Brasilia, 6th November 2023