

Profile

- Chemical engineer and MSc in Chemistry with 5 years of experience in scientific research.
- MSc in Data Analytics student with first-class honours, strong analytical, and problem-solving skills.
- Proven ability to learn new technologies quickly and whiling to work hard to deliver best teamwork results.
- Stamp 1G from February 2024 (Stamp 2 for now).

Technology Skills

- **Python and R:** programmed in Python for 2 years and R for 1 year, focused on data analysis and statistics.
- **Machine learning:** supervised and unsupervised learning, experience with Python libraries such as scikit-learn.
- **Databases, Filesystems:** basic proficiency in SQL.
- **Data visualization:** creates visualizations and dashboards using Power BI.
- **Excel:** authored a course about problem-solving using Excel to conduct during VII Chemistry Week in 2018.

Additional Skills

- Research, scientific writing, customer service, communication.

Projects

* More details about these and other projects at www.tuliobegena.com/projects

Project 1: Traditional Machine Learning methods for Predictive Maintenance

Evaluated and compared four Machine Learning models (Random Forest, Support Vector Machine, Logistic Regression, Decision Trees) on three datasets for predictive maintenance project. Utilized evaluation metrics including accuracy, Kappa, F1 score, and customized cost analysis.

Keywords: Python, confusion matrix, principal component analysis

Project 2: Modeling cancer death rate in USA counties by Multiple Linear Regression

Analysed the relationship between socio-economic data and cancer death rate across 3047 US counties, conducting descriptive statistics to validate normality of variables and address abnormal values.

Keywords: R, regression, descriptive statistics, predictive analysis

Project 3: Sentiment Analysis in Drug Reviews using LSTM

Applied Natural Language Processing techniques, such as Tokenization, Stemming, and Lemmatization, to build a robust model capable of properly predict sentiment polarity in medication reviews. Used the unsupervised learning clustering algorithm to improve the final discussion.

Keywords: Python, LSTM, tokenization, clustering

Project 4: Image-Based American Sign Language Recognition with CNN

Presented a deep learning approach for image-based American Sign Language (ASL) recognition, focusing on enhancing communication for the deaf and hard-of-hearing communities. Four different models were trained and compared to generate a specialized Convolutional Neural Network (CNN) model built to find hidden patterns in data and efficiently interpret sign language components.

Keywords: Python, CNN, Deep Learning

Education

2023 | National College of Ireland | MSc in Data Analytics | H1

Data Mining and Machine Learning I	83%
Statistics for Data Analytics	77.5%
Business Intelligence and Business Analytics	71%
Database & Analytics Programming	67%

2017-2020 | UNESP | MSc Chemistry

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2015-2016 | SENAC | Specialization in Project Management | 85.5%

2010-2014 | UEM | B.A. (Hons) Chemical Engineering | 73.5%

Work Experience

2016 | Cocal | Laboratory Leader

- Managed the sugarcane analysis laboratory leading a team of 7 members.
- Maintained laboratory performance indicators at maximum marks, ensuring consistent quality standards.
- Improved team productivity and satisfaction by implementing fixed roles, resulting in a 20% increase in task completion rate. Facilitated effective communication to understand team needs and ensure seamless transition.

2015 | Max Labor | Sales Consultant

- Reached the sales target in the 3rd month of work, equaling the company's previous record.
- Improvement in communication and negotiation skills.

2014 | Indemil | Quality Control Intern

- Proposed a Project to expand industrial production by 50% from the collection and study of data from industry processes.
- Created a database in Excel containing information about all 120+ laboratories equipment present in the industrial plant, organized with filters to facilitate monitoring of the use conditions of each equipment by laboratory managers.

Languages

Portuguese: native

English: fluent

Interests and Achievements

Volunteering

- Manager of the Communication Nucleus of PMI, São Paulo Chapter. Motivated 100+ local entrepreneurs to attend events containing technical lectures and promoting networking.

Research

- Book chapter published in Portuguese and in English: Effect of graphite nanostructures on the viscosity properties of blends diesel-S10 and biodiesel, DOI 10.37572/EdArt_30062136112.
- Scientific article submitted to Journal of Molecular Liquids in 2023, still in review.

Teaching

- Developed and taught an Excel course, during VII Chemistry Week in 2018, with specific applications in chemistry.
- Prepared and guided a Python workshop for teenagers, during the science fair in 2022 (SESI-Brazil), using a gamified platform.