# Bruno Gomes Coelho

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## **EDUCATION**

# New York University (NYU)

Brooklyn, NY, USA

PhD in Computer Science focused on Machine Learning and Visualisation

Set. 2020 - Jun. 2025 (predicted)

# University of São Paulo (USP), ICMC

Campus of São Carlos, Brasil

Bachelor's degree in Computer Science; Emphasis in Data Science; GPA: 8.8/10.0

Fev. 2016 - Dec. 2019

## Work Experience

Consulting

Data Scientist

São Carlos, São Paulo

May 2020 - Present

• CD for ML: Working on CD tools for automatic scoring and deployment of time series forecasting models.

Imaflora Origens

São Carlos, São Paulo

Data Scientist

Feb 2020 - Present

- ETL: Data wrangling business and Geo-spatial data from different sources for a interactive visualisation.
- **Visualisation**: Building a interactive platform for exploring new data-driven insights. Working alongside business owners to visualise and understand the impact of social programmes.

## University of São Paulo, ICMC

São Carlos, São Paulo

Data Science MBA T.A.

Feb 2020 - Present

- Processing: Creating classes and practical exercises/evaluations. Tutoring a class of 150 students.
- o Topics: Python programming; Intro to ML; Advanced data acquisition and processing.

## University of São Paulo, ICMC

São Carlos, São Paulo

Research Assistant - international scholarship by USAID

Mar 2017 - Dez 2019

- o Processing: Transformed raw audio data (mosquito's wingbeats) into structured data using time series analysis.
- Classifying: Evaluated different models (tree classifiers, deep neural networks, SVMs, etc.) to classify different insect species; achieved highest classification accuracy (99%) in our yearly milestone report.
- Undergratuate thesis: Analysing CNNs applied directly to raw audio data for insect classification; Demonstrating the problems with classical classification approaches in the context of sensor generalization.

## Getúlio Vargas Fundation (FGV) and Imaflora

São Carlos, São Paulo

Data Scientist

Aug 2019 - Dez 2019

- o Data Processing: Creating an open source library for processing Brazil's timber exploration
- Illegal Exploration: Developing a django/D3 visualisation tool that integrates different systems and facilitates the discovery of anomalous data. Integration of 5 years of data across 3 government maintained systems.

#### Birdie

São Carlos, São Paulo

Data Science Intern

Aug 2018 - Fev 2019

- Data Acquisition and Mining: Acquired more than 1 million e-commerce products through crawlers, building a reliable back-end infrastructure through Scrapy and Airflow; Extraction of useful features from the unstructured textual data of the products.
- Machine Learning: Created hierarchical models for product category classification using transductive ML models; Dealing with problems such as inconsistent mapping between websites and badly formatted textual data; Deployed the models as micro-services and scalable internal libraries for processing 10 million+ daily products.

#### • Finalist of the Data Science Games 2018

May 2018 - Set 2018

- Qualification Phase Kaggle competition: Analysed the bond market with data provided by BNP Paribas; Predicted customer interest in a bond using diverse data, from customer data to international market information; Final result in the top 30 worldwide from 220 participating universities, guarantying a place in the final.
- Final 2 day hackaton in France: Used e-commerce data to help predict customer interest in online shopping; Achieved original company's baseline in less than 30 hours. Team sponsored by Itaú Unibanco bank.

## • Co-founder of DATA - Extracurricular Data Science Group

September 2018 - Present

- o Co-Founder: Creating and structuring a extracurricular data science group recognised by the university
- **Teaching**: Weekly classes teaching basic Machine Learning concepts (statistical learning theory, K-NN, Linear Regression, SVMs, etc) and frameworks (numpy, pandas, seaborn, scikit-learn) to a class of 30 students.
- **Deep Learning**: Head of weekly study group focused on state of the art image recognition papers. Development of practical projects with financing from Santander bank.

# • Data Mining Cup - International ML competition

April 2019 - June 2019

- o Placement: Placed 19th from 149 Teams from 114 universities in 28 countries Best team from Brazil.
- Classifying: self checkout data as fraudulent or not. Dealing with small training set and a test set 100x bigger.

## TEACHING

York University Python for Data Science course - Invited teacher Setember 2019 - December 2019

• **Teaching**: Teaching fundamentals of Python to industry members. Course given to 80 students alongside 3 other teachers. Official course at the Universidade de São Paulo.

#### Invited Data Science Course Lead

Setember 2019 - December 2019

• Teaching: Heading the Data Science part of the Data Science and Engineering course at a startup incubator. Teaching 40 students about topics such as Pandas, Matplotlib, Scikit-Learn, Introductory to Machine Learning, Boosting and Flask.

## VOLUNTERING

- Programming Tutor (12 months): Taught fundamentals of logic and computer programming to underprivileged communities, through the basics of web development, integrating JavaScript code with HTML and CSS pages.
- Tutor (8 months): Personal mentor to high school student, helped with doubts related to university life, building a study plan for the SATs and answering carreer questions.

## Invited Events

- Khipu: Latin American Meeting In Artificial Intelligence, Uruguai, invited participant through full merit-based scholarship
- Data Day: Head of the discussion panel "Present and Future of AI" with invited professors and industry members.
- 5th Mathematics Solutions Workshop for Industrial Problems: One of the 3 invited undergraduate members. Analysing timber transport data for an ONG.
- HTN 2018: Full sponsorship to Hack The North 2018, Canada's biggest hackaton. Developed InstaFace, a project to make use of image recognition to find friends on the street.

## TECHNICAL SKILLS

Languages: C, Java, Python, JavaScript, SQL

Frameworks: SciPy, Scikit-Learn, Pandas, Seaborn, Django, D3

Technologies: BeautifulSoup, Scrapy, Git, Docker, Airflow, Jupyter, PyTorch, TensorFlow, Dash

## AWARDS

- Honorable mention on best article at USP's International Symposium of Undergraduate Research International Stage. Less than 600 mentions given from over 3200 applicants.
- Recipient of Academic Featured Student (2016), for students with a GPA above 9.0/10.0 at USP. Around 7 in each 120 students are awarded each year.
- Finalist of the Data Science Games 2018 one of the 20 best teams, from 400 participating teams, representing 220 universities across 46 countries.
- Silver medal on Elo's Merchant Category Recommendation on Kaggle. Over 4000 teams of 1-4 people took part.
- 19th place at Data Mining Cup, from 149 Teams from 114 universities in 28 countries Best team from Brazil.