

# Bruno Gomes Coelho

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## EDUCATION

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- **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

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- **Imaflora** São Carlos, São Paulo  
*Data Scientist* Feb 2020 - Present
  - **Visualisation:** Processing data and creating a D3 application for visualising the effects of company projects.
- **University of São Paulo, ICMC** São Carlos, São Paulo  
*Data Science MBA T.A.* Feb 2020 - Present
  - **Processing:** Helping to create the curriculum for the MBA. Creating classes and practical exercises. Tutoring a class of 150 students.
- **University of São Paulo, ICMC** São Carlos, São Paulo  
*Research Assistant - international scholarship by USAID* Mar 2017 - Dez 2019
  - **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.
  - **Undergraduate 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 Foundation (FGV) and Imaflora** São Carlos, São Paulo  
*Data Scientist* Aug 2019 - Dez 2019
  - **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 Scrappy 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.

## MAJOR PROJECTS

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- **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
  - **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

- **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

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York University Python for Data Science course - Invited teacher September 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**

September 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

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- **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 career questions.

## INVITED EVENTS

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- **Khipu:** Latin American Meeting In Artificial Intelligence, Uruguay, 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

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**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

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- 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.