João P C Bertoldo

26, Brazilian

One-page CV

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CURRICULUM VITAE

SUMMARY

Education

MSc. in artificial intelligence [a].

Double degree MSc. in engineering [b,d].

Professional Experience in Research

1 year of experience [f,g] in research.

Currently working as research engineer [e].

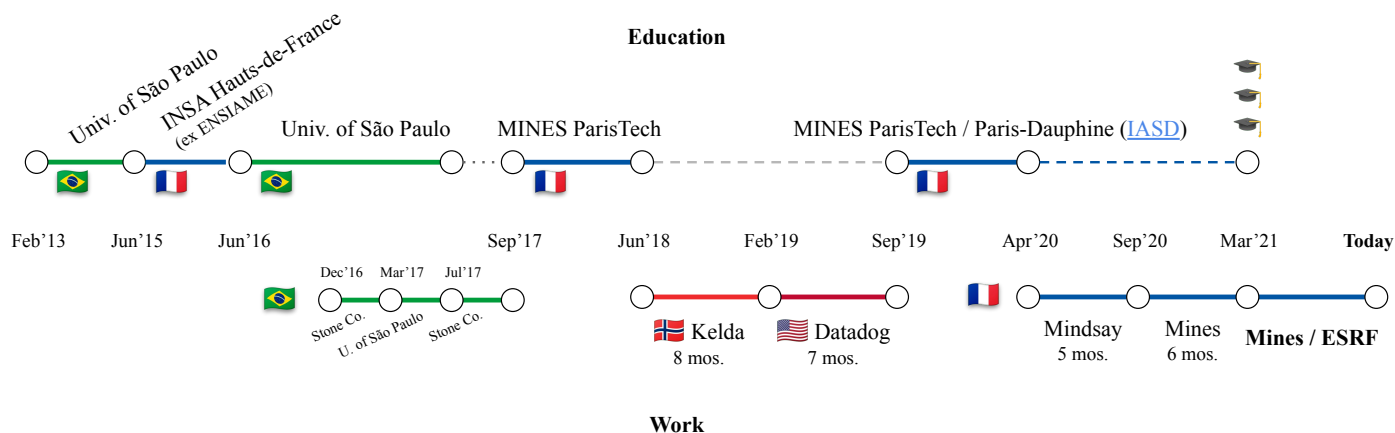2 seminars, 1 paper (WIP), 1 class, and 1 mentorship.

Professional Experience (others)

2 years of experience: Software Engineer [i], Data Scientist [h], and Teaching Assistant [r].

Projects, Skills, etc

Using Python for several years in individual [j] and in-collaboration projects [k,l].

Lived in four countries – Brazil [d], France [a,b,e,g], Norway [i], USA [h], and speaks three languages.

1. EDUCATION

Paris-Dauphine – PSL University (a)
MSc. in Artificial Intelligence, Systems, Data (IASD) – *double degree with [b]*
Subjects: Machine Learning, Deep Learning, Optimization, Image Analysis

Paris, France
2019 – 2020

MINES ParisTech – PSL University (b)
MSc. in Executive Engineering – Minor: Data Science – *double degree with [d]*
Subjects: Software Engineering, Databases, Probability, Statistics, Operations Research

Paris, France
2017 – 2020

ENSIAME – INSA Hauts-de-France (c)
Mechatronics Engineering
1-year scholarship for an international academic exchange programme

Valenciennes, France
2015 – 2016

University of São Paulo (USP) (d)
Mechatronics Engineering
5-year degree at the best university in Latin America (U.S. News & World Report Best Colleges Ranking, 2020)

São Carlos, Brazil
2013 – 2015,   2016 – 2017

2. Professional Experience in Research

The European Synchrotron Radiation Facility (ESRF) [e]　　　　Grenoble, France
MINES ParisTech – PSL University　　　　Paris, France
Research Engineer　　　　since March 2021

Working on a diffraction tomography (DCT) automated pipeline (preprocessing and image segmentation).
→ Link to my slides about this project.

MINES ParisTech – PSL University [f]　　　　Paris, France
Research Intern　　　　Sep. 2020 – Mar. 2021 (6 mos.)

Worked on semantic segmentation with 2D and 3D U-Nets (see project tomo2seg [j]).
Presented results in two seminars [n,o], lectured in a week-long course [q], and wrote a paper [1].

Mindsay [g]　　　　Paris, France
Research Intern　　　　Apr. 2020 – Sep 2020 (5 mos.)

Evaluated explainability methods with layperson-maintained Natural Language Processing (NLP) models.
→ Links: internship report, internship defense presentation

3. Professional Experience (others)

Datadog [h]　　　　New York, USA
Data Scientist Intern　　　　2019 (7 mos.)

Developed algorithms for time series and tag analysis [k], and contributed to the project Correlations [k].
Maintained high-impact production Python codebase and automated test pipeline.

Kelda Drilling Controls [i]　　　　Porsgrunn, Norway
Software Engineer Intern　　　　2018 – 2019 (8 mos.)

Contributed with new features to the project Bivrost [l].

4. Projects

tomo2seg [j]　　　　since Sep. 2020 [f,e]

Developed an X-ray tomography (XCT) semantic segmentation tool using 2D and 3D U-Nets.
Applied it during an experiment at the Soleil Synchrotron, France.
Data, models, and a complementary tutorial (WIP) are publicly available.
→ Link to tomo2seg on GitHub

Correlations [k]　　　　2019 (7 mos.) [h]

Contributed to build *Correlations*: an automated debug tool for complex infrastructures capable of finding correlated accidents in time series.
→ Link to Correlations on Datadog's website

Bivrost [l]　　　　2018 – 2019 (8 mos.) [i]

Maintained and implemented new features in *Bivrost*: a web application for high-resolution time series visualization used for drilling systems monitoring.
Designed and implemented a time series annotation tool for supervised machine learning.
→ Link to Bivrost's page on Kelda Drilling Controls's website

Min'light: sunlight simulator [m]　　　　2017 – 2018 (9 mos.) [b]

A robotic cable-controlled sunlight physical simulator.
Led the project for 6 mos., and developed a 3D motion digital twin in Python.
→ Link to *minlight* on GitHub

5. Talks & Publications

44th edition of the Journée ISS France [n]
Deep learning for automated segmentation of tomographic images
  → *Link to my slides*

Online
Feb. 2021

Seminar at the Center for Mathematical Morphology (CMM) [o]
MINES ParisTech – PSL University
Fiber composite 3D segmentation with neural networks
  → *Link to my slides*

Online
Jan. 2021

[1] J. P. C. Bertoldo, E. Decencière, D. Ryckelynck, and H. Proudhon, "A modular U-Net for automated segmentation of X-ray tomography images in composite materials," work in progress.

6. Teaching & Mentoring

MINES ParisTech – PSL University[p]
Internship mentor of Yasser Ghellab
  Project: Automation for X-ray tomography image segmentation

Paris, France
March – April 2021 (2 mos.)

Computer vision and machine learning for the material scientist (CVML2021) [q]
Member of the teaching team
  Lectured about convolutional neural networks applied to semantic segmentation of composite material tomography.
  → *Link to my slides*

Paris, France
2021 (1 week)

University of São Paulo (USP) [r]
Teaching assistant (part-time)
  Elaborated and conducted workshops on numerical analysis using MATLAB.

São Carlos, Brazil
2015 (6 mos.)

7. Skills

Languages

English   Fluent.
Obtained TOEFL 117/120 (2020). Worked in English-speaking companies (1 yr.) [h,i].

French   Fluent
Read subjects in French (3 yrs.) [a,b,c]. Worked in French organizations (1 year) [e,f,g]. Lectured in French [n,o,q].

Portuguese   Native

Turkish   Beginner

Programming and computer skills

Python   Fluent
Machine/Deep learning   Keras/TensorFlow [j], Scikit-learn
Data analysis   Numpy, Scipy, Pandas, IPython, Matplotlib, Seaborn

Other programming languages   MATLAB [r], JavaScript [i], C/C++ (basics)

Miscellaneous   Git, Linux, Bash/Zsh, SSH, Weka, LaTeX, Zotero, PostgresSQL [b], MongoDB [i]

Academic

Deep learning

Computer Vision, AI applied to the Sciences and Art, 3D X-ray tomography
Attention Is All You Need (Vaswani et al., 2017)
The Lottery Ticket Hypothesis (Frankle and Carbin, 2019)

Newsletters   Papers with Code, DeepAI, The Variable, The Batch (DeepLearning.AI)

Miscellaneous   Papers *without* Code, Towards Data Science, Distill

Personal

Travel & international environments   Have been in 18 countries.

Skydiving   Member of a skydiving association (ASPU)

Podcasts

(PT) Cafe da manhã, Foro de Teresina
(EN) Do you really know?, Impact
(FR) Les couilles sur la table, Maintenant vous savez, Le moment Meurice, Le monde devant soi

Channels   Two Minute Papers, 3Blue1Brown, Vox, The Economist, Porta dos Fundos, Choque de Cultura