



João P C Bertoldo

26, Brazilian

One-page CV

[joaopcbertoldo.github.io](https://github.com/joaopcbertoldo)

April, 2021

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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.

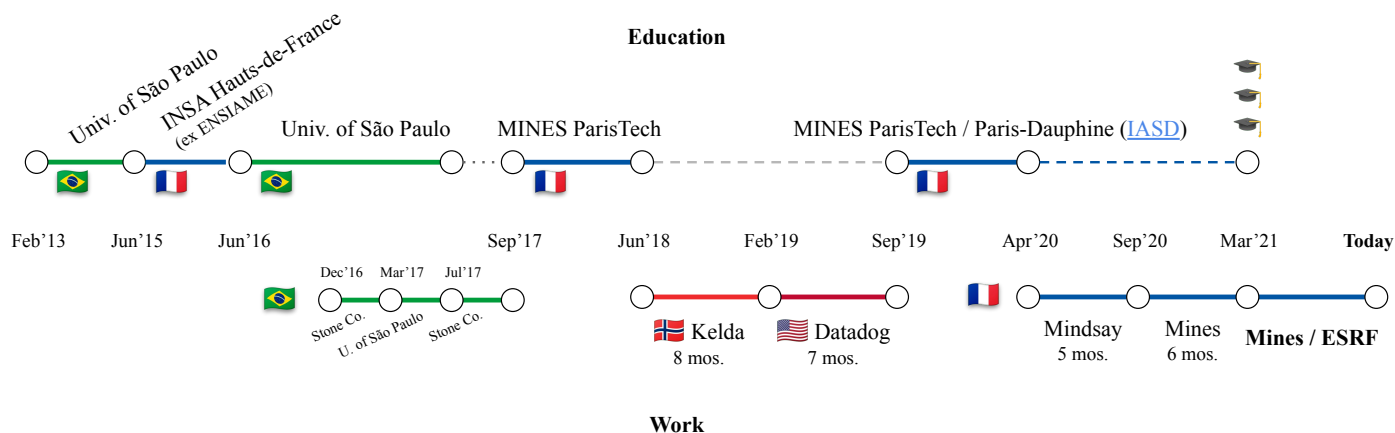
Professional Experience (others)

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]

Paris, France

2019 – 2020

Subjects: Machine Learning, Deep Learning, Optimization, Image Analysis

MINES ParisTech – PSL University ^(b)

MSc. in Executive Engineering – Minor: Data Science – double degree with [d]

Paris, France

2017 – 2020

Subjects: Software Engineering, Databases, Probability, Statistics, Operations Research

ENSIAME – INSA Hauts-de-France ^(c)

Mechatronics Engineering

Valenciennes, France

2015 – 2016

1-year scholarship for an international academic exchange programme

University of São Paulo (USP) ^(d)

Mechatronics Engineering

São Carlos, Brazil

2013 – 2015, 2016 – 2017

5-year degree at the best university in Latin America (U.S. News & World Report Best Colleges Ranking, 2020)

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. Decenci re, 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 S o Paulo (USP) ^(r)

Teaching assistant (part-time)

Elaborated and conducted workshops on numerical analysis using MATLAB.

S o 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, PostgreSQL [\[b\]](#), MongoDB [\[i\]](#)

8. INTERESTS

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](#)



CMM

Centre de Morphologie Mathématique

13 January 2021

Letter of reference for João P C Bertoldo

To whom it may concern,

I met M. Bertoldo in January 2020, when he enrolled in the course “deep learning for image analysis” I teach in the master’s program “Artificial Intelligence, Systems, Data,” a highly selective Parisian master’s degree. He obtained a final score of 33.5/40, ranking among the best students.

From September 2020 until now, I have been co-supervising his final year project, which should end in March. João is working on the automatic segmentation of 3D tomography images. He has already obtained excellent results from the application point of view. In the process, he has suggested several original ideas, and implemented them efficiently – he is proficient in Python. His deep learning skills are already very good, and he is also open to other disciplines. He plans, for instance, to combine deep learning with mathematical morphology to improve his current results. He has a researcher’s attitude: he aims at fully understanding what is going on, remaining critical about his work.

Last but not least, João is also motivated and enthusiastic, and his communication skills are excellent. He has a wonderful rapport with people.

In conclusion, I highly recommend M. João P C Bertoldo for a Ph.D. position in image analysis or deep learning.

A handwritten signature in blue ink, consisting of a stylized 'E' and 'D' intertwined.

Etienne Decencière
Directeur de recherche / Research
Director



Henry Proudhon
CNRS research director
Centre des Matériaux, MINES ParisTech
63-65 rue Henri desbruères, BP 87
F-91003 EVRY Cedex, France
henry.proudhon@mines-paristech.fr

January 18, 2021

Recommendation of Mr. João P. C. Bertoldo

To whom it may concern:

I'm writing this letter to support the application of Mr. Bertoldo. I am a CNRS researcher in Centre des Matériaux MINES Paristech developing new multimodal X-ray-based characterizations for structural materials. I'm leading the BIGMECA chair, a research initiative between MINES ParisTech and Safran to develop AI-based methods in Mechanics of Materials, notably using X-ray images of microstructure and defects. It is in this framework that I proposed Mr. Bertoldo to work on *deep learning for automated segmentation of tomographic images*, and he started in late September 2020.

João was very dedicated to his work and achieved publication-ready results in just three months. During this time, he proved to already be an autonomous thinker and managed his project on his own, asking for guidance whenever needed. I also wanted to mention the excellent programming skills of Mr. Bertoldo; he seems to be able to take down any problem thrown at him. João rank within the top 3% of the students I had to supervise; if I had the funding to propose a Ph.D. thesis to João in his field, it would do it immediately.

João has been a great asset to my group; I did not hesitate to propose to João to contribute to the doctoral course *Computer vision and machine learning for the material scientist*¹, and he accepted enthusiastically.

I very strongly recommend the application of Mr. Bertoldo for a Ph.D. position in data science. Do not hesitate to contact me for further information.

Sincerely,
Henry Proudhon

A handwritten signature in black ink, appearing to read "HProudhon", with a long horizontal stroke underneath.

¹http://dms.mat.mines-paristech.fr/Donnees/data05/503-CVML_new_2021.pdf

September 6, 2019

Re: Letter of Recommendation for João Paulo Casagrande Bertoldo

To whom it may concern:

I was João's manager when he worked as a Data Science Intern at Datadog in New York City from February 2, 2019 through September 6, 2019.

At Datadog, most of João's time was spent helping our team build a new feature that we announced in July and started rolling out to customers in August. Therefore, in addition to exploring data and developing data-based algorithms to support the feature, João also contributed by writing a significant amount of production code and troubleshooting/optimizing issues in our production systems.

João brings a healthy curiosity and restlessness to the problems he works on. He consistently raises ideas for incremental improvements and alternative approaches to the solutions he is implementing. When working with more senior members of our team, he always interrogates their proposals, making sure he has a strong understanding of the rationale for decisions made.

João is comfortable collaborating with whomever he needs to in order to get his job done. He reaches out to engineers both on the same team and on other teams, as appropriate. João is happy to share/present his work with the team to gather ideas and make sure everyone is on the same page.

I was very impressed with João's commitment to personal development. He voluntarily joined with a teammate in taking a course on our learning platform, and he consistently asked for feedback from myself. Most importantly, João listens carefully to feedback and seems intent on acting on it to grow. Needless to say, this is a very valuable trait for any engineer, especially at the beginning of his career.

Sincerely,

A handwritten signature in dark ink that reads "Stephen Kappel". The signature is written in a cursive, flowing style.

Stephen Kappel
Team Lead, Data Science
Datadog