

# ARTHUR BAUVILLE

Yokohama, JP | [a.bauville@gmail.com](mailto:a.bauville@gmail.com)  
Permanent resident visa

## Machine learning engineer and composer

[linkedIn](#) | [github](#) | [portfolio](#)

## SKILLS

---

**Programming languages:** Python, C, Ruby, SQL, JavaScript/HTML/CSS, MATLAB, command line

**Science and Machine learning:** PyTorch, HuggingFace, OpenCV, OpenGL, scikit-learn, Amazon AWS

**Techniques:** machine learning, optimization, deep learning

**Music:** piano, composition, production, Logic Pro

## EXPERIENCE

---

### AXELSPACE – Tokyo, Japan

#### Earth observation data scientist

July 2022 – Present

- Research and development of algorithms related to satellite images to improve geometric and radiometric accuracy (optical flow, color-matching, error identification)
- Developed and delivered a proof-of-concept change detection algorithm as part of a ~100M yen project
- Trained and fine-tuned deep learning models (PyTorch, HuggingFace) for image segmentation

### JAPAN AGENCY FOR MARINE-EARTH SCIENCES AND TECHNOLOGY – Yokohama, Japan

#### Researcher

Jan 2016 – Mar 2022

- Developed a [multiphysics simulation code](#) (C, Python, OpenGL, OpenMP; >50,000 lines of code).
- Visualization, mining, feature engineering and analysis of TB structured simulation data.
- Wrote 5 successful research funding projects since 2015 for a total of 22.2 M¥.
- Wrote or participated in [16 peer-reviewed articles](#) since 2013 with >200 cumulated citations.

### UNIVERSITY OF MAINZ – Germany

#### Post-doctoral researcher

Dec 2014 – Dec 2015

- Developed a [library](#) to design the geometry of numerical simulations based on data (MATLAB, SVG, Paraview). It was used to estimate stresses at a site planned for nuclear waste storage.
- Numerical simulations on super-computer, remote data analysis and visualization of >10TB data.
- Taught finite-element and machine learning classes (regression, PCA, clustering). BSc., MSc. level.

## OTHER PROJECTS

---

### MUSICAL COMPOSITION [Soundcloud](#) | [Musescore](#)

- I have been playing the piano since the age of 8. I have studied classical composition and jazz harmony
- I improvise and compose music for the piano, the orchestra, as well as chip tune music.
- I usually write music as [a score](#), and then produce a [final version](#) in Logic Pro using VSTs

### [BLOG ON MACHINE LEARNING](#) including:

- a reimplementation of the [neural style transfer](#) algorithm(PyTorch, Jupyter).
- An original implementation of [superpixel image segmentation](#) (Numpy, Scikit-learn).

## EDUCATION

---

### UNIVERSITY OF LAUSANNE – Switzerland

PhD in Earth Sciences

Nov 2014

### UNIVERSITY OF GRENOBLE – France

MSc. in Earth Sciences

Jun 2010

## ADDITIONAL

---

**Full stack web-development bootcamp** at [Le Wagon - Tokyo](#) (Jan. - Mar. 2022).

**Languages:** French, English, Japanese (conversational).

**Accolade:** Named “[outstanding reviewer 2021](#)” by Geophysical Journal International.

**[WAI DATATHON 2021](#)** - first prize (1500\$)