

Romain Loiseau

✉ Email:

romain.loiseau@enpc.fr

🌐 Website:

romainloiseau.fr

🐙 Github:

[romainloiseau](https://github.com/romainloiseau)

🆔 ORCID:

0000-0002
1804-0735

📞 Phone number:

(+33)6 61 47 10 52

in LinkedIn:

[loiseau](#)

Romain Loiseau, PhD

Corps des IPEF – From Efficient and Interpretable Deep Learning to Public Policy Design and Implementation

Summary I recently graduated from my PhD at the École des Ponts ParisTech in the computer vision team IMAGINE and at the IGN (the French Mapping Agency) in the machine learning team STRUDEL, advised by Mathieu Aubry and Loïc Landrieu. I was interested in efficient and interpretable real-world 3D data analysis methods. I am now deputy head of the unit in charge of the regulation of the insurance companies and intermediaries at the French Treasury, where we design, negotiate and implement public policies for the insurance sector at both national, European and international level.

Positions

2023 - present : Deputy head of the "Companies and Insurance Intermediaries" unit, French Treasury

In charge of monitoring national regulations and participating in international negotiations on the management of insurance company failures, monitoring cross-cutting initiatives related to the fight against climate change, and monitoring the supervision of two public funds (FRR and FGAP)

2020 – 2023 : PhD student, IMAGINE/LIGM/ENPC - LASTIG/IGN

Real-World 3D Data Analysis: Toward Efficiency and Interpretability

Advisors: Mathieu Aubry and Loïc Landrieu

2020 – present : Ingénieur des Ponts, des Eaux et des Forêts, MTE

Civil servant for the French Ministry of Ecological Transition

2020 : IPEF Intern, CGDD, French Ministry of Environment

6 months

Strategy of the *French assessment of ecosystems and ecosystemic services*

2019 : Research Intern, General Electric Healthcare

7 months

Adversarial learning for CT and MRI medical imaging

2018 : Research Intern, Bentley Systems

6 months

Large scale 3D semantic segmentation with deep neural networks

Advisor: Renaud Keriven

2017 : Intern, Arara Chile

3 months

Machine learning projects & Machine learning instructor

2015 : Military Service as Officer Cadet, Autun's Military School

6 months

Section chief & Scientific teacher

Education

2019 - 2020 : École des Ponts ParisTech - Agro ParisTech, MS

Paris, France

MS PAPDD: policies and public action for sustainable development

2018 - 2019 : ENS Cachan, MSc

Paris, France

Master MVA: machine learning and computer vision

2018 - 2019 : École des Ponts ParisTech, MSc

Paris, France

Master IMI: computer science and applied mathematics

2015 - 2019 : École Polytechnique, MSc

Paris, France

Engineering school: algorithmic, applied mathematics and biology

2013 - 2015 : Stanislas High School

Paris, France

Preparation course for exams to enter French engineering schools

Romain Loiseau

✉ Email:

romain.loiseau
@enpc.fr

🌐 Website:

romainloiseau.fr

🐙 Github:

romainloiseau

🆔 ORCID:

0000-0002
1804-0735

📞 Phone number:

(+33)6 61 47 10 52

in LinkedIn:

loiseau

2010 - 2013 : Bonaparte High School

Doha, Qatar

High School Diploma with honours, specialised in Sciences

Research Experience

Publications

- **2024, CVPR:** [R. Loiseau](#), E. Vincent, M. Aubry, L. Landrieu, *Learnable Earth Parser: Discovering 3D Prototypes in Aerial Scans*.
- **2024, CVPR:** G. Astruc, N. Dufour, I. Siglidis, C. Aronsson, N. Bouia, S. Fu, [R. Loiseau](#), Van N. Nguyen, C. Raude, E. Vincent, L. Xu, H. Zhou, L. Landrieu, *OpenStreetView-5M: The Many Roads to Global Visual Geolocation*.
- **2022, ECCV:** [R. Loiseau](#), M. Aubry, L. Landrieu, *Online Semantic Segmentation of LiDAR Sequences: Dataset and Algorithm*.
- **2022, ISMIR:** [R. Loiseau](#), B. Bouvier, Y. Teytaut, E. Vincent, M. Aubry, L. Landrieu, *A Model You Can Hear: Audio Identification With Playable Prototypes*.
- **2022, CVPRw - Transformers for Vision:** [R. Loiseau](#), M. Aubry, L. Landrieu, *Helix4D: Online Semantic Segmentation of LiDAR Sequences*.
- **2022, CVPRw - Sight and Sound:** [R. Loiseau](#), B. Bouvier, Y. Teytaut, E. Vincent, M. Aubry, L. Landrieu, *A Model You Can Hear: Audio Classification with Playable Prototype*.
- **2021, ICCVw - Learning 3D Representations for Shape and Appearance:** [R. Loiseau](#), T. Monnier, M. Aubry, L. Landrieu, *Representing Shape Collections with Alignment-Aware Linear Models*.
- **2021, 3DV:** [R. Loiseau](#), T. Monnier, M. Aubry, L. Landrieu, *Representing Shape Collections with Alignment-Aware Linear Models*.

Research Expertise

- **Reviewing:** ICCV 2023, CVPR 2023, ISPRS Journal 2022-23, 3DV 2022, ECCV 2022, CVPR T4V Workshop 2022, CVPR Earth Vision Workshop 2022-23, ISPRS 2022, CVIU 2021-22-23
- **Organizing:** LASTIG Machine Learning and Computer Vision for remote sensing reading group, 30+ presentations in 2022-23

Teaching

- 2023 : ENSG-IGN, *Teaching Assistant* (M1-6 hours)
Introduction to Deep Learning
- 2022-23 : ENSG-IGN, *Course Instructor* (M2-18 hours)
Deep Learning for Remote Sensing
- 2022 : ENPC, *Course Instructor* (L3-15 hours)
Computer Vision for Mechanics of Materials
- 2022 : ENSG-IGN, *Course Instructor* (M2-6 hours)
Deep Learning for Satellite Images

Open-source repositories

- 🔗 [romainloiseau/EarthParserDataset](#) 22 ★
- 🔗 [romainloiseau/LearnableEarthParser](#) 34 ★
- 🔗 [romainloiseau/a-model-you-can-hear](#) 35 ★
- 🔗 [romainloiseau/HelixNet](#) 40 ★
- 🔗 [romainloiseau/Helix4D](#) 63 ★
- 🔗 [romainloiseau/deep-linear-shapes](#) 30 ★

Public datasets

- **Earth Parser Dataset:** 7 aerial LiDAR scans, covering 7.7km² with annotations in diverse urban and natural environments, with Loïc Landrieu. 74 📄
- **HelixNet:** 10B annotated 3D points captured by a moving vehicle for autonomous driving, with Loïc Landrieu. 270 📄

Romain Loiseau

✉ Email:

romain.loiseau@enpc.fr

🌐 Website:

romainloiseau.fr

🐙 Github:

[romainloiseau](https://github.com/romainloiseau)

🔑 ORCID:

0000-0002
1804-0735

☎ Phone number:

(+33)6 61 47 10 52

in LinkedIn:

[loiseau](https://www.linkedin.com/in/loiseau)

Talks in Conferences and Invited Talk

🗣 oral 🎓 tutorial 🖼 poster

2024

- 🗣 **Technical talk at the French Treasury**, Paris, France, oral presentation
AI: From Data to Models, Challenges and Focus Points for the Regulator.

2023

- 🗣 **PhD defense**, Paris, France, oral presentation
Real-World 3D Data Analysis: Toward Efficiency and Interpretability.
- 🗣 **ENPC PhD students seminar**, Paris, France, oral presentation
Understanding Large-Scale Real-World 3D Data.
- 🗣 **IGN-ENSG Research Days**, Paris, France, oral presentation
Understanding Large-Scale Real-World 3D Data.
- 🖼 **French Ministry of Environment PhD Seminar**, France, poster
Understanding Large Scale 3D Point Clouds for Public Policies.
- 🗣 **ISMIR at Deezer**, Paris, invited talk
A Model You Can Hear: Audio Identification With Playable Prototypes.
- 🗣 **ENAC, EPFL**, Sion, Switzerland, remote invited talk
Real-Time LiDAR Segmentation & Representing Large Shape Collections.

2022

- 🗣 **ISMIR**, Belanguru, India, poster
A Model You Can Hear: Audio Identification With Playable Prototypes.
- 🗣 **GTTI, Centre Borelli**, Paris, France, invited talk
Real-Time LiDAR Segmentation & Representing Large Shape Collections.
- 🗣 **Bundesamt für Kartographie und Geodäsie (BKG)**, spotlight
Deep Learning for 3D data at IGN.
- 🖼 **ECCV**, Tel-Aviv, Israël, poster
Online Segmentation of LiDAR Sequences: Dataset and Algorithm.
- 🗣 **ALLEGRIA seminar, CEA-ISAS**, Paris, France, invited talk
Real-Time LiDAR Segmentation & Representing Large Shape Collections.
- 🗣 **Willow, INRIA**, Paris, France, invited talk
Real-Time LiDAR Segmentation & Representing Large Shape Collections.
- 🖼 **Vision and Sports Summer School**, Prague, Czech Republic, poster
Online Segmentation of LiDAR Sequences: Dataset and Algorithm.
- 🗣 **CVPR - Transformer for Vision Workshop**, New-Orleans, US, spotlight
Helix4D: Online Semantic Segmentation of LiDAR Sequences.
- 🗣 **CVPR - Sight and Sound Workshop**, New-Orleans, US, spotlight
A Model You Can Hear: Audio Classification with Playable Prototypes.
- 🎓 **XXIV ISPRS Congress**, Nice, France, tutorial
Deep Learning for Point Clouds Semantic Segmentation.
- 🖼 **XXIV ISPRS Congress**, Nice, France, poster
Online Segmentation of LiDAR Sequences: Dataset and Algorithm.
- 🖼 **GDR ISIS**, Paris, France, poster
A Model You Can Hear: Audio Classification with Playable Prototypes.
- 🗣 **LIX, École Polytechnique**, Paris, France, invited talk
Representing Large Shape Collections & Real-Time LiDAR Segmentation.
- 🗣 **SAMP.ai**, Paris, France, invited talk
Representing Shape Collections with Alignment-Aware Linear Models.
- 🖼 **IGN-ENSG Research Days**, Paris, France, poster
Representing Shape Collections with Alignment-Aware Linear Models.
- 🗣 **French Ministry of Environment PhD Seminar**, France, oral presentation
Representing Shape Collections & Real-Time Semantic Segmentation of Dynamic 3D Point Clouds for Public Policies.

Romain Loiseau

✉ **Email:**

romain.loiseau@enpc.fr

🌐 **Website:**

romainloiseau.fr

🐙 **Github:**

[romainloiseau](https://github.com/romainloiseau)

🆔 **ORCID:**

0000-0002
1804-0735

☎ **Phone number:**

(+33)6 61 47 10 52

in LinkedIn:

[loiseau](https://www.linkedin.com/in/loiseau)

2021

- 🖼️ **3DV**, virtual, poster
Representing Shape Collections with Alignment-Aware Linear Models.
- 🖼️ **ICCV - Learning 3D Representations for Shape and Appearance Workshop**, virtual, poster
Representing Shape Collections with Alignment-Aware Linear Models.
- 🎤 **IGN-ENSG Research Days**, virtual, oral presentation
Representing Shape Collections with Alignment-Aware Linear Models.

Skills, Interests and Personal

Machine learning

- Functional optimisation
- Deep learning
- LiDAR data
- 3D data
- Time-sequences
- Interpretable learning
- Unsupervised learning

Computer skills

- 🐍 Python
- 🔥 PyTorch
- 🇨🇯 C++
- ☕ Java
- 🍷 AWS
- 🐙 Git
- 🐧 Linux
- 🏠 HTML/CSS
- \LaTeX

Languages

- 🇫🇷 **French:** Native speaker
- 🇬🇧 **English:** Fluent
- 🇪🇸 **Spanish:** Intermediate

International experience

- **2017:** 🇨🇱 Santiago, Chile
- **2010-2013:** 🇶🇦 Doha, Qatar
- **2003-2006:** 🇳🇮 Port-Harcourt, Nigeria
- **1997-2001:** 🇸🇪 Aberdeen, Scotland

Personal interests

- Choir (bass singer)
- Concert organisation
- Production of an album
- Graphic design
- Scale Modelling