

Dr. Charlotte Pelletier

Associate Professor

☎ +33 2 97 01 72 24

charlotte.pelletier@univ-ubs.fr

Université Bretagne Sud, Vannes

Institut de Recherche en Informatique et Systèmes Aléatoires (IRISA)

[Département 6](#) – Signal, Image, Langage – Equipe [OBELIX](#)sites.google.com/site/charpelletierORCID : [0000-0002-4652-7778](https://orcid.org/0000-0002-4652-7778)Google Scholar : bit.ly/2ZZUfXy**Academic activities**

Since October 2019 **Assoc. Professor at Institute for Research in IT and Random Systems (IRISA), University of Southern Brittany (UBS), Vannes, France**

Her research is in the field of machine learning and computer vision with a focus on time series analysis. She conducted work on accurate and scalable time series classification, domain adaptation, continual learning, super-resolution, label noise and imputation of missing values. Applications are dedicated to remote sensing, and more specifically the analysis of satellite image time series.

January 2018 to September 2019 **Research fellow at the Faculty of Information Technology, Monash University, Melbourne, Australia.** Scalable and accurate time series classification

October 2014 to December 2017 **PhD candidate, CESBIO (Center for the study of the biosphere from space), Toulouse University, France.** Land cover mapping over large areas by using high-resolution satellite image time series with a focus on the identification and processing training mislabeled data.

Education

2017 **PhD, Toulouse University, France**

2014 **ENSEIRB-MATMECA (Graduate School of Engineering), Bordeaux, France**

Higher study in Electronics specialized in signal and image processing with the highest honor.

2014 **Master's Degree in Electronics, Bordeaux 1 University, France**

Specialized signal and image processing with the highest honor.

2009 à 2011 CPGE en PCSI / PC* (Physique Chimie) - Lycée Clémenceau, Nantes

2009 Bac S-SI mathématiques européen anglais, mention très bien – Lycée Lesage, Vannes.

Publications

- Selected international peer-reviewed papers** (h-index=16, 8 publications with more than 100 citations)
- Miller, L., **Pelletier, C.**, & Webb, G. I. (2024). Deep Learning for Satellite Image Time-Series Analysis: A review. *IEEE Geoscience and Remote Sensing Magazine*.
- Painblanc, F., Chapel, L., Courty, N., Friguet, C., **Pelletier, C.**, & Tavenard, R. (2023). Match-And-Deform: Time Series Domain Adaptation through Optimal Transport and Temporal Alignment. In *Joint European Conference on Machine Learning and Knowledge Discovery in Databases* (pp. 341-356).
- Nyborg, J., **Pelletier, C.**, Lefèvre, S., & Assent, I. (2022). TimeMatch: Unsupervised cross-region adaptation by temporal shift estimation. *ISPRS Journal of Photogrammetry and Remote Sensing*, 188, 301-313.
- Ismail Fawaz, H., Lucas, B., Forestier, G., **Pelletier, C.**, Schmidt, D. F., Weber, J., Webb, G. I., Lhassane Idoumghar, P-A. M., & Petitjean, F. (2020). InceptionTime: Finding Alexnet for time series classification. *Data Mining and Knowledge Discovery*, 34(6), 1936-1962.
- Pelletier, C.**, Webb, G. I., & Petitjean, F. (2019). Temporal convolutional neural network for the classification of satellite image time series. *Remote Sensing*, 11(5), 523.
- Pelletier, C.**, Valero, S., Inglada, J., Champion, N., & Dedieu, G. (2016). Assessing the robustness of Random Forests to map land cover with high resolution satellite image time series over large areas. *Remote Sensing of Environment*, 187, 156-168.

Research activities

Nomination 2025 – 2030 - Fundamental Junior Chair [Institut Universitaire de France](#) (IUF)

Projects PI (finished) **01/2024 – 12/2027 - ANR JCJC** (307 k€)

DECOL: DEep Continual Learning from Satellite Image Time Series

02/2024⁴ – 01/2028 - ANR PRCE (Total = 640 k€ - UBS/IRISA = 60 k€) [responsible for IRISA]

MONI-TREE: MONItoring TREE comfort inside cities

PI: Thomas Corpetti (CNRS/LETG)

01/2023 – 12/2024 – National Remote Sensing Program Project (CNES, CNRS-INSU, IGN, IRD et Météo-France) – Co-PI: S. Valero (CESBIO) (10k€)

PASTEIS: Novel self-supervised learning methods to exploit Sentinel-2 image time series: application to land cover change detection mapping

09/2021 – 08/2023 – Call for exploratory research projects GdR ISIS (6 k€)

Co-PI : N. Audebert (IGN) *SESURE: Sentinel time series Super Resolution*

06/2020 – 05/2021 – AAP INS2I to support IRISA young researchers (3 k€) *EarthSensLearning*

Projects participant **09/2024 – 08/2027 – TWINNING WIDE-AREA (HORIZON 2020) (UBS/IRISA= 334 k€)**

From sky to seafloor observation: Achieving eXcellence in Oceanic surveiLLance and cOnservation Through deep Learning (AXOLOTL) – Coordinator: Cyprus Marine And Maritime Institute (CMMI) (Chypre) + Other partner: VLIZ Instituut Voor De Zee (Belgique)

01/2023 – 12/2026 – ANR JCJC MAGE: Mapping Aerial imagery by learning on Game Engine-based simulations – PI: N. Audebert (IGN)

06/2021 – 12/2024 – ANR JCJC Deep generative models for detecting land cover changes from satellite image times series – PI: Silvia Valero (CESBIO/Université Toulouse III)

07/2023 – 06/2025 - CNES TOSCA SR4VEG (UBS/IRISA = 15 k€) *Apport de la super-résolution pour évaluer l'état de la végétation arborée urbaine pour les missions Sentinel-Next HR et Biodiversity – PI: Thomas Corpetti (CNRS/LETG)*

PhD cosupervision **Since 01/2025 - S. Osson, Univ Bretagne Sud [50 %] – Deep continual learning for satellite image time series**

Since 05/2024 - A. Okabayashi, Univ Bretagne Sud [30 %] – Super resolution from satellite image time series

Since 10/2023 - C. Dufourg, Univ Bretagne Sud [50 %] - Learning and analysing spatio-temporal objects from satellite image time series

Graduated

2024 - A. Toro, University Campinas (Brazil) [30 %] – Mapping Integrated Crop-Livestock systems from remote sensing data

2022 - S. Ahmed, Monash University [25 %] - Scalable time series classification algorithms

2021 - B. Lucas, Monash University [25 %] - Deep learning for the classification of Earth's observation data

2020 – C. Tuna, Univ. Bretagne Sud [20 %] - Morphological Hierarchies for Analysing Satellite Image Time Serie

+ more than 20 MSc supervision, mentorship for 1 PhD student at TUM (Germany), and hosting international PhD candidates and researchers

PhD Jurys **Reviewer (6):** O. Turkoglu (ETH Zürich, 2023), K. Meshkini (Uni Trento, 2024), T. Boston (ANU, 2024), S. Mohammadi (ITC, 2024), S. Li (Copenhaguen Uni, 2024), M. Yli-Heikkilä (Uni of Helsinki, 2025)

Examiner (15): E. Alvarez-Vanhard (Uni. Rennes 2, 2021), G. Lenczner (Uni. Paris-Saclay, 2022), T. T. Debella (Uni. Haute-Alsace, 2022), R. Wenger (Uni. Strasbourg, 2023), P. Nodet (Uni. Paris-Saclay, 2023), I. De Gellis (Uni. Bretagne Sud, 2023), M. Obrenovic (Uni. Strasbourg, 2023), N. L. Nguyen (ENS, 2023), M. Letard (Uni. Rennes 2, 2023), V. Bellet (Uni. Toulouse, 2024), J. Bourcier (Uni. Grenoble Alpes, 2024), R. Leygonie (Paris Cité, 2024), A. Frion (IMT Atlantique, 2024), C. Huynh (Uni. Strasbourg, 2025), E. Vincent (Ecole Nationale des Ponts et Chaussées, 2025)

Keynote invitation at international venues Apr. 2025 – [Brazilian Symposium on Remote Sensing](#) (Salvador, Brazil) *Deep learning for the analysis of satellite image time series*

Feb. 2025 – Research seminar BIFOLD (Berlin, Germany) *Exploring advances in satellite image time series analysis*

Nov. 2023 – Workshop on Machine Vision for Earth Observation and Environment Monitoring ([MVEO](#)) at BMVC (Aberdeen, UK)

Domain adaptation for satellite image time series

Apr. 2023 – [Artificial Intelligence and ecosystems management](#) (Palencia, Spain)

Hands-on session Artificial Intelligence & Ecosystem Management

Apr. 2023 – [Brazilian Symposium on Remote Sensing](#) (Florianopolis, Brazil) *Crop-type mapping from optical and radar time series using attention-based deep learning*

Nov. 2022 – Research seminar Luiz Aragao (TREES Research Lab, online) *How to automatically produce crop-type maps from high-resolution satellite images time series*

Jul. 2021 – [ISPRS Geospatial Lecture Day \(online\)](#)

Deep Learning for time series classification

+ panel discussion IGARS24, invited talks to teaching institutes (Bristol doc. sch., ENS Rennes)

Keynote invitation / seminar in France Dec. 2022 – Invited speaker at 7èmes Rencontres de Statistique - Environnement et climat (UBS) (invited by François Septier and Gilles Durieux)

Automatic mapping of the land surfaces from Earth observation time series

Nov. 2022 – Invited research seminar at Mulhouse (invited by Germain Forestier)

Unsupervised cross-region adaptation by temporal shift estimation

Jun. 2022 – Seminar [DataScience@CESBIO](#) (invited by Jordi Inglada)

Unsupervised domain adaptation for satellite image time series

Oct. 2020 – GdR-ISIS & COMET-TSI-CNES. [Extraction d'attributs et apprentissage pour l'analyse des images de télédétection](#) (online) – *Deep learning for time series Classification: application to Earth Observation time series*

Jul. 2020 – Pannel discussion on machine learning applied to time series data from Earth observations. [MACLEAN seminar \(GdR MaDICS\) young forums](#)(online)

Nov. 2021 – Invited speaker at LaSTIG : [Deep learning for environment monitoring](#) (invited by Loic Landrieu) *Deep Learning for the Analysis of Remote Sensing Time Series*

Oct. 2021 – [Invited seminar of MIAT team](#) at INRAE Toulouse (invited by Nathalie Vialaneix and Sandra Plancade)

Time Series Classification: recent advances and challenges

Program Committee ECML/PKDD (since 2019); PAKDD (2019-2022); IGARSS (best student paper competition, since 2020); ECML/PKDD Workshop AALTD (since 2018); ECML/PKDD Workshop MACLEAN (since 2019); and many others + session chairs in numerous conferences

Reviewer activities Machine Learning, Data Mining and Knowledge Discovery, Knowledge and Information Systems, Astrodynamics, Remote Sensing of Environment, ISPRS Journal of Photogrammetry and Remote Sensing, International Journal of Applied Earth Observations and Geoinformation, Advances in Space and Research, Computers and Electronics in Agriculture, IEEE Transactions on Geoscience and Remote Sensing, IEEE Geoscience and Remote Sensing Letters; etc.
+ grant evaluation for France (including ANR) and Europe (FWO and GAGR)

Research and academic administration

Scientific responsibility **2024 – 2028** – Nominated member of the Specialist Scientific Commissions on Mathematics, Computer Science, Digital Sciences and Technologies, Artificial Intelligence and Robotics of INRAE (evaluation of the researchers)
2024 – Member of the committee evaluation for TOSCA projects (CNES)
Since 2022 - Working group chair on temporal geospatial data understanding ([ISPRS TCII/WG5](#))
Since 2020 – Technical committee co-chair on remote sensing and mapping ([IAPR TC7](#)).

Administration **Since 2024** – Elected member of the Research Council and Academic Council at UBS
Since 2023 – Member of the governing board of IRISPACE (representative of the UBS President)
Since 2020 – Member of the [IRISA's gender equality commission](#) – as one of the contact points for the distant site of Vannes
2019-2023 – Member of the scientific council of GIS-Bretel (IRISPACE since 2023)

Academic responsibility **Since 2022** – Elected member of the Faculty Council at UBS (*Faculté SSI*)
Since 2019 - Co-head of the studies of the geodata science track within the Erasmus Mundus Joint Master Degree (EMJMD) named [Master Copernicus in Digital Earth](#)

Selection committee (researchers) **2025** – MCF 27 Uni. Haute Alsace, MCF Science des données AgroParisTech
2024 – MCF 27 Uni. Haute Alsace
2023 – MCF 26 UBS (*Traitement mathématiques des images et science des données*)
2022 – CR INRAE (*Intelligence artificielle pour la télédétection*), ATER 27 UBS
2021 – IR INRAE *Ingénieur-e en traitement d'images par deep learning*

Workshop organisation **2025** – [Artificial Intelligence for Earth Observation](#) (AI4EO) Symposium, Rennes, France
Since 2019 – [EarthVision](#): Large Scale Computer Vision for Remote Sensing Imagery at CVPR
Since 2022 – Biennial Workshop on [Pattern Recognition and Remote Sensing](#) at ICPR
Since 2023 – [International Workshop on Temporal Analytics](#) at PAKDD
2024 – [Machine Learning for Remote Sensing](#) at ICLR
+ thematic session and tutorial organiser at ISPRS 2022, IGARSS 2024, and JURSE 2023+25

Special Issues Guest editors for Remote Sensing of Environment and Remote Sensing journals.

Prize

Award Best PhD in Science awarded by the Académie des Sciences, Inscriptions et Belles-Lettres of Toulouse, France (2018)

Disseminating scientific culture

December 2021 Co-organisation of a [seminar](#) entitled 'Filles et garçons face aux sciences: des inégalités dès l'enfance' presented by Clémence Perronnet at the UBS (IRISA's gender equality commission).
November 2021 First participant to the '[Women in Copernicus](#)' podcast to present my work as a lecturer and researcher in computer science, and highlights women working in the field of Earth observation.
May 2023 Testimonial for students at the Université Catholique de l'Ouest (UCO, Arradon) in their [Science](#) study project, that aimed at highlighting representations of women scientists to the general public through an immersive experience.