

Charles Truong

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Education / Employment History

- 2020 – 2024 **Post-doctoral researcher** at Centre Borelli (ENS Paris-Saclay). Subjects: *Statistical Signal Processing, Change-point Detection, Motif/Anomaly Detection, Time Series Compression*
- 2019 – 2020 **Research Engineer** at Winglet (Start-up). Subjects: *Plane Ticket Price Prediction, Large Scale Machine Learning*.
- 2015 – 2018 **PhD in Machine Learning** at ENS Paris-Saclay (supervisors: Laurent Oudre, Nicolas Vayatis). Thesis title: *Change-point detection, application to physiological signals*.
- 2010 – 2014 **MSc in Applied Mathematics (Ecole Centrale Paris)**

Publications

Selected Journal Articles

- 1 C. **Truong** and V. Runge, “An efficient algorithm for exact segmentation of large compositional and categorical time series,” *Stat*, 2024. [DOI: 10.1002/sta4.70012](#).
- 2 T. Germain, C. **Truong**, and L. Oudre, “Persistence-based motif discovery in time series,” *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2024. [DOI: 10.1109/TKDE.2024.3417303](#).
- 3 C. **Truong**, L. Oudre, and N. Vayatis, “Selective review of offline change point detection methods,” *Signal Processing*, 2020. [DOI: 10.1016/j.sigpro.2019.107299](#).
- 4 C. **Truong**, L. Oudre, and N. Vayatis, “Greedy kernel change-point detection,” *IEEE Transactions on Signal Processing*, 2019. [DOI: 10.1109/TSP.2019.2953670](#).






Recent Conference Proceedings

- 1 T. Germain, S. Gruffaz, C. **Truong**, A. O. Durmus, and L. Oudre, “Shape analysis for time series,” in *Advances in Neural Information Processing System (NeurIPS)*, 2024.
- 2 S. Blotas and C. **Truong**, “Structured loss for deep change-point detection,” in *Proceedings of the European Signal Processing Conference (EUSIPCO)*, 2024.
- 3 C. **Truong**, T. Bugea, B. Bouhet, G. Tresset, F. Marquier, and K. Perronet, “Photobleaching step counting and localization for fluorescence microscopy,” in *Proceedings of the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, 2024.

Under Review

- 1 C. **Truong** and T. Moreau, “Convolutional sparse coding for time series via a ℓ_0 penalty: An efficient algorithm with statistical guarantees,” 2024.
- 2 A. Kostic, V. Runge, and C. **Truong**, “Change point detection in Hadamard spaces by alternating minimization,” 2024.
- 3 E. Jalilvand, S. V. Kumar, C. **Truong**, E. Haacker, and S. Mahanama, “Characterizing spatiotemporal variability in irrigation timing and extent through thermal remote sensing,” 2024.





Teaching

- 2023 - Now  Main coordinator, 38h per year, around 10 students in bioinformatics. *Course*: Introduction to R programming, L3 BGI, University of Evry. **Material**.
- 2020 - Now  Teaching assistant, 18h per year, around 180 students. *Course*: **Machine Learning for Time Series** (coordinator: Laurent Oudre), Master 2 MVA, ENS Paris-Saclay. **Material**.
- 2023 - Now  Co-coordinator (with Mathilde Mougeot), 18h per year, around 70 students. *Course*: Introduction to Machine Learning, Master 2 MAL, **ENSIIE**.
- 2022 - Now  Teaching assistant, 18h per year, around 10 students. *Course*: Introduction to R&D (coordinator: Mathilde Mougeot), Master 1 ("Étudiants en alternance"), **ENSIIE**. **Material**
- 2022 - Now  Teaching assistant, 9h per year, around 10 students in psychology. *Course*: Data Processing in e-Health, **Master 2 CYBER** (coordinator: Lise Haddouk). **Material**

Student Supervision

- (PhD students) **Sylvain Combettes (2020-2024)**: **Symbolic Representation for Time Series** (Co-supervision with L. Oudre). **Thibaut Germain (2021-2024)**: **Pattern Detection and Shape Analysis for Physiological Time Series** (Co-supervision with L. Oudre).
- (Master students) **2024**: Nicolas Cecchi (co-supervised with V. Runge), Yanis Gomes (submitted article, co-supervised with L. Oudre), Bastien Lhopitallier (co-supervised with L. Benhaim), Even Matencio (submitted article). **2023**: Simon Blotas (published article), Lucas Jacquier (co-supervised with K. Perronet).
- (Bachelor students) **2024**: Alois Vincent, Erwann Gallois, **2023**: Louis Leroy.

Event Organization

- 2023  Co-organized with **Vincent Runge** a **two-day international workshop on change-point detection** at ENS Paris-Saclay (around 50 researchers).
- 2023 - 2024  Co-organizer of the internal seminar with Charlotte Le Mouel and Ioannis Bargiotas.
- 2022  Member of the organization committee of the **A.I. Cup, a Bavarian-French Artificial Intelligence Challenge**, a data challenge for start-ups.
- 2020  Member of the organization committee of the **Digital French-German Summer School with Industry 2020**, a one-day virtual event between universities and industrial partners.

Invited Talks

PyCon DE & PyData, Berlin (2024)
Computational and Methodological Statistics (CMStatistics), Berlin (2023).
Workshop on Change Point Analysis. Warwick University (2023).
Workshop at NeurIPS (Learning from Time Series for Health) (2022).
StatScale ECR Meeting. Brighton (UK) (2022)
IMS Annual Meeting, London (2022).

Grants

Co-PI on **travel grant from DATAIA** (24k€) for Toby D. Hocking (2025)
Internship funding for Nicolas Cecchi (2024).
Funding for the Paris-Saclay Change-Point Detection Workshop (2023)
Member of the OVD-SAAS project (1M€) from the grant "**SESAME Filières PIA**" (PI: Miguel Colom), 2021.

Miscellaneous

Sports {11, 7, 5}-a-side football, Paris FC **Music** Rap and musical comedy **Language** اللغة العربية الفصحى