Hugo Thimonier
3rd Year PhD Candidate in Machine Learning
Expected Graduation: September 2024

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Employment History

2021 – ... **Ph.D. Candidate in Computer Science**, , CentraleSupelec.
Topics covered: *Anomaly Detection, Self-Supervised Learning, Contrastive Learning, Deep-Learning for Tabular Data.*
- Proposed **3 novel anomaly detection** methods for tabular data: improved my **project management** capabilities.
- Supervised an internship and group projects for final year CentraleSupelec students: improved my **management skills**.
- Participated in multidisciplinary seminars in computer science: improved my **popularization** capacity.
- Coded from scratch deep learning models in PyTorch and Python.

2023 **Teacher** Computer Science Department, CentraleSupelec.
Courses: *Python* (24h)
Topics Covered: *OOP, Algorithmic, Data types...etc*

2021 – 2022 **Teaching Assistant** Computer Science Department, CentraleSupelec.
Courses: *Artificial Intelligence* (20h)
Topics Covered: *Machine Learning, Search Problems (e.g. Adversarial Search Problems, Local Search Problems), Markov Decision Process, Reinforcement Learning, Logic.*

2021 **Deep Learning Scientist Intern**, L'Oreal Research & Innovation. (6 months)
Developed a **novel post-processing model to enforce temporal consistency in videos** which were processed frame by frame using non-transformation equivariant image-trained algorithms. (Paper: here, Supplementary material: here)
- Computer Vision.
- Deep learning for CV: CNN, ConvLSTM, Temporal Warping.
- **Team work** and **autonomy**.
- Long term **project management**.

2020 **Data Scientist Intern**, Gecina. (3 months)
Commentary classification using Recurrent Neural Networks (LSTM).
- Database management with **MySQL**.
- Pytorch implementation of an LSTM.

Education

2021 – · · · · **Ph.D. Candidate, CentraleSupelec** Computer Science.
Thesis title: *Machine Learning and Explainability - Application to Fraud Detection.*

2015 – 2020 **Normalien Fonctionnaire-Stagiaire, ENS Paris-Saclay**

2018 – 2020 **M.Sc. Engineering, ENSAE** Statistics, Probabilities and Computer Science.
Relevant Course: *Advanced Optimization, Optimal Transport, Deep Learning, High-Dimensional Statistics.*

Education (continued)

2020 – 2021 **One-year University Diploma, Sorbonne University** Russian.
This diploma grants me A2 level and would allows me to pursue a Bachelor in Russian.

Research Publications

Preprints

1. H. Thimonier, F. Popineau, A. Rimmel, and B.-L. Doan, *Making parametric anomaly detection on tabular data non-parametric again*, 2024. arXiv: 2401.17052 [cs.LG].
2. H. Thimonier, F. Popineau, A. Rimmel, B.-L. Doan, and F. Daniel, *Comparative evaluation of anomaly detection methods for fraud detection in online credit card payments*, 2023. arXiv: 2312.13896 [cs.LG].

Conference Proceedings

1. H. Thimonier, F. Popineau, A. Rimmel, and B.-L. Doan, "Beyond individual input for deep anomaly detection on tabular data," in *NeurIPS 2023 Second Table Representation Learning Workshop*, 2023. URL: https://openreview.net/forum?id=lsn7ehxAdt.
2. H. Thimonier, F. Popineau, A. Rimmel, B.-L. Doan, and F. Daniel, "TracInAD: Measuring influence for anomaly detection," in *2022 International Joint Conference on Neural Networks (IJCNN)*, 2022, pp. 1–6. DOI: 10.1109/IJCNN55064.2022.9892058.
3. H. Thimonier, J. Despois, R. Kips, and M. Perrot, "Learning long term style preserving blind video temporal consistency," in *2021 IEEE International Conference on Multimedia and Expo (ICME)*, 2021, pp. 1–6. DOI: 10.1109/ICME51207.2021.9428445.

Skills & Interests

Languages	French (native), English (fluent), Spanish (B1), Russian (A2)
Coding	Python, SQL, LaTeX, SLURM, Gitlab/GitHub, UNIX
Machine Learning	PyTorch, Scikit-learn, Pandas, Numpy…
Sports	Running, Tennis, Chess.
Other	Electronic music production, russian 19th literature.
Volunteering	Mathematics teacher at Institut Villebon Georges Charpak (2019-2020).

Oral and Poster Presentations

Oral Presentation

2023 **TAU Seminar (2023)**, Paris (Fr). Presented my paper *Beyond individual input for deep anomaly detection on tabular data*.

GALaC Seminar (2022), Paris (Fr). Presented my paper *TracInAD: Measuring influence for anomaly detection.*

2022 **JDSE 2022**, Paris (Fr). Presented my paper *TracInAD: Measuring influence for anomaly detection.*

IJCNN 2022, Padova (It). Presented my paper *TracInAD: Measuring influence for anomaly detection.*

2021 **ICME 2021**, Virtual. Presented my paper *Learning long term style preserving blind video temporal consistency.*

Oral and Poster Presentations (continued)

Poster

2023 **NeurIPS 2023**, New Orleans (USA). Presented our paper Beyond individual input for deep anomaly detection on tabular data in the *Table Representation Learning Workshop*.

2022 **Symposium GDR MaDICS**, Lyon (Fr). Presented current work on anomaly detection.

References

Available on Request