# Hugo Thimonier, PhD Candidate in Machine Learning

☑ hugo.thimonier(at)centralesupelec.fr







### **Employment History**

Ph.D. Candidate in Computer Science, , CentraleSupelec. 2021 - · · · ·

> Topics covered: Anomaly Detection, Self-Supervised Learning, Contrastive Learning, Deep-Learning for Tabular Data.

- Proposed two new anomaly detection methods for tabular data: improved my project management capabilities.
- Made a benchmark for anomaly detection methods on real-life banking fraud data.
- Supervised an internship and group projects for final year CentraleSupelec students: improved my management skills.
- Participated to pluridisciplinary seminars in computer science: improved my vulgarization capacity.
- Coded deep learning models in PyTorch and Python.

**Teaching Assistant** Computer Science Department, CentraleSupelec.

Courses: Artificial Intelligence, Python

Topics Covered: Machine Learning, Search Problems (e.g. Adversarial Search Problems, Local Search Problems), Markov Decision Process, Reinforcement Learning, Logic.

06/2021 - 12/2021**Deep Learning Scientist Intern**, L'Oreal Research & Innovation.

> Developed a novel post-processing model to enforce temporal consistency in videos which were processed frame by frame using non-transform 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**.

Data Scientist Intern, Gecina.

Commentary classification using Recurrent Neural Networks (LSTM).

- Database management with MySQL.
- Pytorch implementation of an LSTM.

#### **Education**

**Ph.D. Candidate, CentraleSupelec** Computer Science. 2021 - · · · ·

Thesis title: Machine Learning and Explainability - Application to Fraud Detection.

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

2021 - 2022

06/2020 - 09/2020

















### **Education (continued)**

2018 – 2020

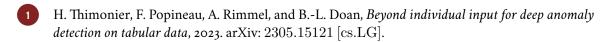
M.Sc. Engineering, ENSAE Statistics, Probabilities and Computer Science.
Relevant Course: Advanced Optimization, Optimal Transport, Deep Learning, High-Dimensional Statistics.

2015 - 2020

Normalien Fonctionnaire-Stagiaire, ENS Paris-Saclay

# **Research Publications**

#### **Preprints**



#### **Conference Proceedings**

- 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.
- 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. ODI: 10.1109/ICME51207.2021.9428445.

## **Skills & Interests**

Languages French (native), English (fluent), Spanish (B1), Russian (A2)

Coding Python, sql, LTEX, slurm, Gitlab/GitHub, unix

Machine Learning PyTorch, Scikit-learn, Pandas, Numpy...

Misc. Academic research, teaching, curiosity, fast-learning, team-player, rigor, autonomy, project management.

Sports Running, Tennis, Chess.

Other Electronic music production, russian XIXth literature.

Volunteering Mathematics teacher at Institut Villebon Georges Charpak (2019-2020).

#### **Oral and Poster Presentations**

#### **Oral Presentation**

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.

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

#### **Poster**

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

# References

Available on Request