Hugo Thimonier, PhD Candidate in Machine Learning

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GitHub   🌐 Personal Site   in LinkedIn
ɡ GoogleScholar   R^G ResearchGate

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 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.

2021 – 2022

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**.

06/2020 – 09/2020

Data Scientist Intern, Gecina.
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.*

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.

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

1   H. Thimonier, F. Popineau, A. Rimmel, and B.-L. Doan, *Beyond individual input for deep anomaly detection on tabular data*, 2023. arXiv: 2305.15121 [cs.LG].

Conference Proceedings

1   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.

2   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…
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

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.*

Poster

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

References

Available on Request