Victor Letzelter

PhD Student in Machine Learning, Paris, France

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Education

PhD in Machine Learning at **Telecom Paris** (Palaiseau, France) 2023 – Present
The PhD research on deep learning and random modeling applied to machine perception has resulted in publications [1, 2, 3] and open-sourced repositories.

MRes Mathematics, Vision, and Learning (MVA) at **ENS Paris-Saclay** 2021 – 2022
Specialized in deep and reinforcement learning, computational statistics, convex optimization, computer vision, and time series processing. GPA: 83% with highest honors.

MSc in Data Science at **Mines de Saint-Étienne** (Saint-Étienne, France) 2019 – 2022
Covered advanced topics in probabilities, statistics, machine learning, and quantum physics. Graduated with a GPA of 87%.

Bachelor in Mathematics at Université Jean-Monnet (Saint-Etienne, France) 2020 – 2021
Completed alongside my second year at Mines de Saint-Étienne; measure theory, complex analysis, differential calculus, topology, and numerical analysis. GPA: 79%.

Preparation classes at Lycée Fabert (Metz, France) 2017 – 2019
Field MPSI-MP* – Intensives courses in Maths, Physics, and Computer Science to prepare for competitive exams. Admitted at Mines de Saint-Etienne.

Work Experience

PhD Student at **Valeo.ai** (Paris, France) 2023 – Present
Focus on *multi-hypotheses* models for uncertainty quantification applied to spatial audio and machine vision. Supervised by G. Richard, M. Fontaine, and M. Chen.

Research Scientist at **Valeo.ai** (Paris, France) Dec. 2022 – Mar. 2023
Research position before the start of a PhD. Supervisor: Patrick Pérez.

Research Intern at **Neural Concept** (Lausanne, Switzerland) Apr. 2022 – Sept. 2022
Neural Concept leverages Geometric Deep Learning for Physics. Research topic: Multi-task Learning on geometric neural networks. Supervisor: Jonathan Donier.

Research Intern at the **National Laboratory of Fusion** (Madrid, Spain) June 2021 – Aug. 2021
Development of a probabilistic model for data generation. Design of a Deep learning algorithm for event detection in time series of electrostatic potential.

Publications

[1] V. Letzelter, D. Perera, C. Rommel, M. Fontaine, S. Essid, G. Richard, and P. Pérez. "Winner-takes-all learners are geometry-aware conditional density estimators". In: *ICML*. 2024.

[2] V. Letzelter, M. Fontaine, M. Chen, P. Pérez, S. Essid, and G. Richard. "Resilient Multiple Choice Learning: A learned scoring scheme with application to audio scene analysis". In: *NeurIPS*. 2023.

[3] C. Rommel, V. Letzelter, N. Samet, R. Marlet, M. Cord, P. Pérez, and E. Valle. "ManiPose: Manifold-Constrained Multi-Hypothesis 3D Human Pose Estimation". In: *arXiv:2312.06386*. 2023.

Skills

French: C2 level (native language)
English: B2-C1 level (TOEIC 885/990)
German: B1 level

LaTeX, **Python** and **R**: Professional competence
Matlab and **Shell**: Intermediate level
C and **Java**: Beginner level.

Interests

Sports. Running, Road and mountain biking, Swimming, Skiing, Table tennis.
Music and association. Piano (10 years). Musical production (FL Studio 20) and animation (DJ).
Other. Chess, Market Finance.