Michael Etienne Van Huffel

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Education

Eidgenössische Technische Hochschule (ETH) Zurich **2022 – 2025**
MSc in Statistics *cum laude* *GPA: 5.90/6.0*
Selected courses: Probabilistic Artificial Intelligence; Time Series Analysis; Statistical Learning Theory; Mathematical Statistics; Topological Data Analysis; Natural Language Processing.

Eidgenössische Technische Hochschule (ETH) Zurich **2019 – 2022**
BSc in Mechanical Engineering *GPA: 5.38/6.0*
Selected courses: Machine Learning; Stochastic; Algorithms and Data Structures; Quantum Mechanics.

Work Experience

Quantitative Analyst Intern *Garda Capital Partners* **Dec. 2025 – Present**
Trading Floor | Inflation Desk: Quantitative development and predictive modeling within the Inflation Team.

Research Affiliate *Max Planck Institute (remote)* **Dec. 2025 – Present**
Guest Researcher and co-author focusing on the development of neural low-discrepancy sequences.

AI Research Intern *Max Planck Institute* **Aug. 2025 – Dec. 2025**
Engineered a neural network-based sampler for low-discrepancy sequences using PyTorch and CUDA kernels.
Outperforms industry-standard Sobol/Halton sequences in convergence speed; directly applicable to high-efficiency Monte Carlo simulations.

Military Service *Swiss Armed Forces* **Jan. 2025 – May 2025**
Completed mandatory military service as part of national duty. Developed resilience and leadership in high-pressure environments.

Visiting Researcher *Imperial College London* **Feb. 2024 – Sept. 2024**
Built a scalable NLP pipeline combining Topological Data Analysis and LLMs to detect semantic shifts.
Achieved State-of-the-Art (SOTA) performance on diachronic change benchmarks.

Graduate Researcher *ETH Zurich (remote)* **Jan. 2024 – Aug. 2024**
Engineered a novel discrete transform algorithm to vectorize persistence diagrams, surpassing SOTA accuracy in graph and tumor particle classification. Work accepted at SIAM ALENEX25.

Undergraduate Researcher *ETH Zurich* **Feb. 2022 – Jul. 2022**
Developed evolutionary algorithms for direct policy search in MuJoCo physics simulations.
Benchmarked various policy search methods to optimize agent learning efficiency in continuous control environments.

Teaching Assistant *ETH Zurich* **Sept. 2021 – Dec. 2024**
Instructed 4 undergraduate courses including *Statistics II*, *Analysis III*, and *Models, Algorithms and Data*.
Designed final exams, delivered weekly tutorial lectures, and mentored students in mathematical statistics and programming.

Publications

Michael Etienne Van Huffel, Vadim Lebovici, Olympio Hacquard, and Matteo Palo. Discrete transforms of quantized persistence diagrams. In *Proceedings of the 2025 SIAM Symposium on Algorithm Engineering and Experiments (ALENEX25)*, 2025.

Michael Etienne Van Huffel, Nathan Kirk, Makram Chahine, Daniela Rus, and T. Konstantin Rusch. Neural low-discrepancy sequences, 2025. URL https://arxiv.org/abs/2510.03745. Under review at ICLR 2026.

Technical Skills

Programming Languages	Python, C++, R, Java, Matlab, HTML, LaTeX
Tools & Technologies	Git, PyTorch, TensorFlow, SciKit, Pandas, NumPy, Gudhi, CUDA, Huggingface
Languages	Native Italian; Professional English and German; Advanced French
Interests	Competitive Chess (Peak Rating: 2027), Skiing, Running, Mountain Biking