Winfried van den Dool

Amsterdam, The Netherlands
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Education

2021 - present
Ph.D. in Machine Learning
QUVA Lab, University of Amsterdam, the Netherlands
Topic: Computational efficiency in deep learning, adaptive resource allocation for fast inference and sampling
Supervisor: Prof. dr. Max Welling

2016 - 2019
Master Mathematical Sciences *(cum laude)*, Utrecht University
Specialization in probability, statistics and mathematical modeling
Thesis: A new method using Bayesian Neural Networks to generate explanations of Deep Learning decisions (*grade 9/10*)
Final GPA: 4.00

2016 - 2017
Premaster Economics, Utrecht University
Final GPA: 4.00

2012 - 2016
Bachelor Mathematics (*cum laude*), Utrecht University
Bachelor Physics and Astronomy (*cum laude*), Utrecht University
Minors in: Computer Science (*grade 9/10*), Econometrics (*grade 9/10*) and Philosophy of Science (honors program)
Thesis: A new algorithm for counting self-avoiding walks: the Tiling method (*9/10*)
Final GPA: 4.00

Work experience

2025
Research Internship (6 months) at Fermioniq on quantum algorithms for efficiently solving Partial Differential Equations using tensor network representations

2018 - 2021
Data Scientist at PricewaterhouseCoopers software developer focusing on the application of machine learning in finance, with an emphasis on explainable AI.

2018
Research Internship (6 months) at RaboBank doing causal inference research on macroeconomic variables and the influence of Quantitative Easing on yield curves.

Publications

2026 (Planned)
Efficient Long-Context Transformers via Hierarchical Vector Quantization
Winfried van den Dool, Patrick Forré, Amir Habibian, Yuki M. Asano, Max Welling

2026
AVQ-Attention: Adaptive Vector-Quantized Attention (ECCV)
Winfried van den Dool, Patrick Forré, Amir Habibian, Yuki M. Asano, Max Welling

2025
Adaptive Mesh Quantization for Neural PDE Solvers (TMLR, ICLR J2C certificate)
Winfried van den Dool, Maksim Zhdanov, Yuki M. Asano, Max Welling

2023
Efficient Neural PDE-Solvers using Quantization Aware Training (ICCV workshop)
Winfried van den Dool, Tijmen Blankevoort, Yuki M. Asano, Max Welling