

MORITZ SIMON VANDENHIRTZ

PhD Student focusing on Generative AI & Interpretability
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EDUCATION

ETH ZURICH ZURICH, SWITZERLAND

2022 – 2026 PhD Student in Machine Learning

Research Focus: Generative AI, Interpretable ML, Computer Vision

Supervisors: Prof. Julia E. Vogt, Prof. Bjoern H. Menze

Affiliation: Institute of Machine Learning, ETH Zurich, Associated PhD Student at ETH AI Center

2022 Master of Science in Statistics

GPA: 5.98/6 (Class Rank 1)

Thesis: Interpretable Approach to Discover and Remove Hidden Biases in Medical Datasets

Supervisor: Prof. Julia E. Vogt

UNIVERSITY OF ZURICH ZURICH, SWITZERLAND

2020 Bachelor of Arts in Business and Economics

GPA: 5.84/6 (Class Rank 2)

Thesis: Additive, High Dimensional Models for Predicting Stock Returns

Supervisor: Prof. Michael Wolf

HONORS & AWARDS

2024 [Oral and 6 Posters at ICML Workshops](#)

2023 [Spotlight Poster at NeurIPS](#)

2022 [Willi Studer Prize by ETH Zurich for the best master's degree in Statistics \(D-MATH\)](#)

2021 [Swiss Study Foundation \(2021-2023\)](#)

2020 Summa cum Laude distinction by University of Zurich for B.A. in Business and Economics

TECHNICAL SKILLS

Computer Vision, Deep Learning, Foundation Models, Generative AI, Image Processing, Multimodality, NLP
Python, PyTorch, Tensorflow, R, Git, LaTeX, Microsoft Office, Slurm, MATLAB, SQL

PUBLICATIONS

2024 Stochastic Concept Bottleneck Models

Vandenhirtz*, M., Laguna*, S., Marcinkevics, R., & Vogt, J. E.

Neural Information Processing Systems (2024)

2024 Beyond Concept Bottleneck Models: How to Make Black Boxes Intervenable?

Laguna*, S., Marcinkevics*, R., **Vandenhirtz, M.**, & Vogt, J. E.

Neural Information Processing Systems (2024)

2023 [Tree Variational Autoencoders](#)

Manduchi*, L., **Vandenhirtz*, M.**, Ryser, A., & Vogt, J. E.

Spotlight at *Neural Information Processing Systems (2023)*

2023 [This Reads Like That: Deep Learning for Interpretable Natural Language Processing](#)

Fanconi*, C., **Vandenhirtz*, M.**, Husmann, S., & Vogt, J. E.

Empirical Methods in Natural Language Processing (2023)

2022 [Two Decades of Active Surveillance for Prostate Cancer in a Single-Center Cohort: Favorable Outcomes after Transurethral Resection of the Prostate](#)

Hagmann, Sarah, et al.

Cancers 14.2 (2022)

WORKSHOP PRESENTATIONS

- 2024** [scTree: Discovering Cellular Hierarchies in the Presence of Batch Effects in scRNA-seq Data](#)
Vandenhirtz*, M., Barkmann*, F., Manduchi, L., Boeva, V., & Vogt, J. E.
Oral at *Efficient Foundation Models for Biological Discovery Workshop at ICML (2024)*
- 2024** [Structured Generations: Using Hierarchical Clusters to Guide Diffusion Models](#)
Gonçalves, J., Manduchi, L., **Vandenhirtz, M.**, & Vogt, J. E.
Structured Probabilistic Inference & Generative Modeling Workshop at ICML (2024)
- 2023** [Signal Is Harder To Learn Than Bias: Debiasing with Focal Loss](#)
Vandenhirtz, M., Manduchi, L., Marcinkevičs, R., & Vogt, J. E.
Spotlight at *Domain Generalization Workshop at ICLR (2023)*

PROFESSIONAL EXPERIENCE

ALLIANZ SUISSE ZURICH, SWITZERLAND

- 2019** **Data Science and Central Controlling Intern**
Learnings: forecasting, implementation of new statistical methods,
communication of statistical results, critical thinking, problem-solving

ACADEMIC SERVICE

PEER REVIEWING

- 2024** Neural Information Processing Systems
2024 Models of Human Feedback for AI Alignment Workshop at ICML
2023 Deep Generative Models for Health Workshop at NeurIPS

THESES SUPERVISION

- 2024*** Bernold, N. “Generative B-Cos Networks” (*current)
2024* Hoffmann, W. “Post-Hoc Stochastic Concept Bottleneck Models” (*current)
2024* Ebeling, N. “Time and Spectral Diffusion Models for Cardiac Time-Series” (*current)
2024* Makonnen, M. “Measuring Leakage in Concept Bottleneck Models” (*current)
2024 Carballo, A. “Interpretable Capabilities of Concept-Enhanced Diffusion and Prototype Networks”
2024 Dekas, D. “Clinical Evaluation of Antibiotic Reducing ML Method”
2024 Gonçalves, J. [“Enhancing TreeVAE with Diffusion Models”](#)
2023 Scherrer, D. [“DREAM: Detecting and Reducing Excessive Antibiotic Medication using ML”](#)

TEACHING ASSISTANTSHIP

- 2024** Advanced Machine Learning (252-0535-00)
2023 – 2024 Machine Learning for Healthcare (261-5120-00)
2023 Foundations of Computer Science (252-0852-00)
2019 – 2022 Statistics (03SM22AOEC10)
2019 – 2022 Introductory Econometrics (BOEC0004)

LANGUAGES

German (native), English (Cambridge C2 Proficiency Level), French (B1)

HOBBIES

Renting billboards; playing games (top 1% in chess, hearthstone, rocket league, s4 league), guitar, salsa, handball

REFERENCES

References are available upon request