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Thomas Marco Sutter

Curriculum Vitae

Summary

Machine learning researcher with a PhD in Machine Learning from ETH Zurich, specializing in multimodal, generative, and self-supervised representation learning. Equipped with a strong technical skillset, four years of industry experience, and a proven publication record, I am eager to apply my expertise to empower real-world applications using ML/AI.

Experience

2023–Present **Postdoctoral Researcher**, *Institute for Machine Learning*, ETH Zurich.
- Development of solutions for multiomics and multimodal healthcare applications (Python, PyTorch)
- Evaluation, Design, and Training of multimodal foundation models for the Swiss AI initiative
- Leading projects and guiding junior PhD students

2023 **Postdoctoral Researcher**, University of California, Irvine.
- Visited Prof. Dr. Stephan Mandt
- Developed novel multimodal generative machine learning methods

2018-2023 **Graduate Researcher**, *Institute of Machine Learning*, ETH Zurich.
- (Co-)Authored 20 scientific publications at top-tier ML conferences (NeurIPS, ICML, ICLR) and in medical journals
- Design of multimodal generative models and representation learning methods
- Development of pipelines for machine learning applications in the healthcare domain

2015–2018 **R&D Software Engineer**, Logitech, Zurich.
- Developed and improved computer vision algorithms in the Consumer Video Unit
- Developed machine learning methods from scratch, collected the data and tested the developed methods on real-world data
- Brought various machine learning projects from the prototype to production (Python, Tensorflow, C++)

2014–2015 **Project Collaborator**, upicto GmbH, Zurich.
- Worked on computer vision algorithm for estimating the visibility distance using the camera network of MeteoSwiss
- Transformed the algorithm and the pipeline from a research project to a production algorithm (Python, R, OpenGL)

Education

2018–2023 **Dr. sc. ETH in Machine Learning**, *Institute for Machine Learning*, ETH Zurich.
- Supervisor: Prof. Dr. Julia E. Vogt
- Thesis: Imposing and Uncovering Group Structure in Weakly-Supervised Learning

2011–2014 **M.Sc. in Electrical Engineering and Information Technology**, *ETH Zurich*.
- Master Thesis: Camera-based Visibility Estimation
- Semester Thesis II: Multimodal Object Detection using Hough Forests
- Semester Thesis I: Line Detection using the Hough Transform on an ASIC

2008–2011 **B.Sc. in Electrical Engineering and Information Technology**, *ETH Zurich*.
- Bachelor Thesis: The Evolution of Cooperation

Selected Publications

2024 T. M. Sutter, Y. Meng, N. Fortin, J. E. Vogt, and S. Mandt, "Unity by Diversity: Improved Representation Learning in Multimodal VAEs," *Advances in Neural Information Processing Systems*.

2023 T. M. Sutter, A. Ryser, J. Liebeskind, and J. E. Vogt, "Differentiable Random Partition Models," *Advances in Neural Information Processing Systems*.

T. M. Sutter, L. Manduchi, A. Ryser, and J. E. Vogt, "Learning Group Importance using the Differentiable Hypergeometric Distribution," *International Conference on Learning Representations*.

2021 T. M. Sutter, I. Daunhawer, and J. E. Vogt, "Generalized Multimodal ELBO," *International Conference on Learning Representations*.

2020 T. M. Sutter, I. Daunhawer, and J. E. Vogt, "Multimodal Generative Learning Utilizing Jensen-Shannon Divergence," *Advances in Neural Information Processing Systems*.

Selected Presentations

2024 **Generative AI for Good: What are the savior applications of generative AI and what data needs do they have?**, *ICLR 2024*, Vienna.
Data-Centric Machine Learning Workshop at ICLR 2024, Panel Discussion

2024 **Unity by Diversity: Improved Representation Learning for multimodal VAEs**.
Invited talk at UCSF, Abbasi Lab

2022 **Multimodal Scalable VAEs**.
Invited talk at University of Freiburg, Freiburg Young Scientist AI Network

2022 **Maschinelles Lernen und künstliche Intelligenz: Eine Einführung** .
Invited talk at CSNOW Schnupperstudium, ETH Zurich

Reviewing

- ICML (2022, 2023)
- NeurIPS (2021, 2022, 2024)
- ICLR (2022, 2023, 2024)
- MLHC (2020, 2021)

Languages

German	**Mothertongue**	
English	**Fluent**	
French	**Intermediate**	*High School Level*
Italian	**Basic**	*Basic words and phrases only (A2)*

Programming skills

Languages	Python, C++, Matlab, R, Java
ML/DL	Pytorch, Tensorflow, HuggingFace, Scikit-Learn, Numpy, Pandas, Sci-Py
Misc	OpenCV, OpenGL, Git, Latex

Interests

- Soccer
- Cooking
- Fashion
- Running