Omer Rochman Sharabi

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Overview

I am a PhD student at the University of Liège working with Prof. Gilles Louppe on scientific machine learning. My interests are model discovery, neural emulators, and inverse problems. Currently, I am exploring how diffusion models, Bayesian inference, and posterior sampling can be used to solve forward and inverse problems in the context of physics, weather science, and PDEs. I am looking for collaboration and internship opportunities, as well as reaseach and postdoc positions.

Education

PhD	**University of Liège**, with the supervision of Prof. Gilles Louppe	Oct 2021 – Ongoing
MSc Mathematics	**Technical University of Munich (TUM)**, "Solving Schrödinger's equation with Deep Learning" gitlab	Oct 2017 – Oct 2020
BSc Physics	**Waseda University**, exchange	Sep 2015 – Aug 2016
BSc Physics	**University of Leipzig**, "Stability of symmetric Barchan dunes"	Oct 2013 – Aug 2017

Publications

Appa: Bending Weather Dynamics with Latent Diffusion Models for Global Data Assimilation — ML4PS, NeurIPS 2025
Gérôme Andry, Sacha Lewin, François Rozet, Omer Rochman Sharabi, Victor Mangeleer, Matthias Pirlet, Elise Faulx, Gilles Louppe, page

A Neural Material Point Method for Particle-based Emulation — TMLR, 02/2025
Omer Rochman Sharabi, Sacha Lewin, Gilles Louppe, arxiv/2408.15753 page

Trick or treat? Evaluating stability strategies in graph network-based simulators — ML4PS, NeurIPS 2023
Omer Rochman Sharabi, Gilles Louppe, page

Differentiable composition for model discovery — ML4PS, NeurIPS 2022
Omer Rochman Sharabi, Gilles Louppe, page

Experience

appliedAI, AI researcher — Munich, Germany, May 2019 – Sep 2021

- Design and implementation of AI and ML architectures with focus on transferring state-of-the-art research into commercial applications
- Delivery of products as Python packages
- Topics worked on include reinforcement learning for plant control, time series prediction, anomaly detection, and Bayesian optimization.

Skills

Languages: Python, English, Spanish, Hebrew, German (B2), French (B1)

Technologies: Jax, PyTorch, Linux, Git, Mathematica, Latex, Slurm, Docker, etc.