Lenart Treven

Github: github.com/lenarttreven
Email: lenart.treven@inf.ethz.ch
Portfolio: lenarttreven.github.io
Mobile: +41 77 999 65 74

Experience

- **Google DeepMind** — Zürich, Switzerland
  Research Scientist Intern — *June 2025 – Oct 2025*
  - **LLM Post-training**: Synthetic datasets
- **Eumedica, ETH Juniors** — Zürich, Switzerland
  Data Scientist (Internship) — *Dec 2019 – Feb 2020*
  - **Chemicals production optimization**: Optimized the production of medication to achieve faster and higher yield.
- **Xlab** — Ljubljana, Slovenia
  Software Developer (Internship) — *Jun 2018 – Aug 2018*
  - **Work with R&D teams:**: Improved company's logs parsing algorithm. Improved logging statistics and visualization within Elasticsearch, Logstash, and Kibana.
- **Institute "Jožef Stefan"** — Ljubljana, Slovenia
  Researcher (Internship) — *Sep 2017 – Oct 2017*
  - **Work with a PhD student in the department of solid state physics:**: Investigating the magnetic properties of matter at temperatures just above absolute zero

Education

- **ETH Zurich** — Zurich, Switzerland
  Ph.D. Computer Science — *Nov 2020 - Nov 2025*
  Thesis *on Continuous-time Reinforcement Learning. Supervisors: Prof. Andreas Krause, Prof. Florian Dörfler*
  Teaching Assistant: *Probabilistic Artificial Intelligence (graduate) (2021, 2022, 2023), Introduction to Machine Learning (undergraduate) (2021, 2022, 2023, Head TA in 2024 with more than 1200 students enrolled.)*
- **ETH Zurich** — Zurich, Switzerland
  M.Sc. Data Science — *Sep 2018 – Oct 2020*
  Thesis *on Online Learning of Linear-Quadratic Regulators.*
  Courses: *Advanced Machine Learning, Probabilistic Artificial Intelligence, Randomized Algorithms and Probabilistic Methods, Applied Stochastic Processes, Mathematics of Information, Fundamentals of Mathematical Statistics, Quantitative Risk Management*
- **University of Ljubljana, Faculty of Mathematics and Physics** — Ljubljana, Slovenia
  B.Sc. Mathematics (passed with distinction) — *Oct 2015 – July 2018*
  Thesis *on Support Vector Machines.*
  Courses: *Algorithms & Data Structures, Functional Programming, Programming 1, 2, Analysis 1, 2, 3, 4, Algebra 1, 2, 3, Probability, Statistics, Numerical Methods 1, 2, Optimization Methods, Physics 1, 2, Topology, Discrete Mathematics, Logic and set theory*

Papers

- **Optimism via Intrinsic Rewards: Scalable and Principled Exploration for Model-based Reinforcement Learning.** : Bhavya Sukhija, Lenart Treven, Carmelo Sferrazza, Florian Dörfler, Pieter Abbeel, Andreas Krause. Submitted to NeurIPS. 2025.
- **ActSafe: Active Exploration with Safety Constraints for Reinforcement Learning.** : Yarden As, Bhavya Sukhija, Lenart Treven, Carmelo Sferrazza, Stelian Coros, Andreas Krause. ICLR. 2025.
- **When to Sense and Control? A Time-adaptive Approach for Continuous-Time RL** : Lenart Treven, Bhavya Sukhija, Yarden As, Florian Dörfler, Andreas Krause. NeurIPS. 2024.
- **NeoRL: Efficient Exploration for Nonepisodic RL** : Bhavya Sukhija, Lenart Treven, Florian Dörfler, Stelian Coros, Andreas Krause. NeurIPS. 2024. Spotlight.
- **Transductive Active Learning: Theory and Applications** : Jonas Hübotter, Bhavya Sukhija, Lenart Treven, Yarden As, Andreas Krause. NeurIPS. 2024.
- **Bridging the Sim-to-Real Gap with Bayesian Inference** : Jonas Rothfuss, Bhavya Sukhija, Lenart Treven, Florian Dörfler, Stelian Coros, Andreas Krause. IROS. 2024. Oral presentation.
- **Active Few-Shot Fine-Tuning**: Jonas Hübotter, Bhavya Sukhija, Lenart Treven, Yarden As, Andreas Krause. ICLR. Workshop. 2024.
- **Efficient Exploration in Continuous-time Model-based Reinforcement Learning**: Lenart Treven, Jonas Hübotter, Bhavya Sukhija, Florian Dörfler, Andreas Krause. NeurIPS. 2023.
- **Optimistic Active Exploration of Dynamical Systems**: Bhavya Sukhija, Lenart Treven, Cansu Sancaktar, Sebastian Blaes, Stelian Coros, Andreas Krause. NeurIPS. 2023.
- **Distributional Gradient Matching for Learning Uncertain Neural Dynamics Models**: Lenart Treven, Philippe Wenk, Florian Dörfler, Andreas Krause. NeurIPS. 2021.
- **Learning stabilizing controllers for unstable linear quadratic regulators from a single trajectory**: Lenart Treven, Sebastian Curi, Mojmír Mutný, Andreas Krause. L4DC. 2021.
- **The total solar irradiance during the recent solar minimum period measured by soho/virgo**: Wolfgang Finsterle, Jean-Philippe Montillet, Werner Schmutz, Rok Šikonja, Luka Kolar, Lenart Treven. Scientific Reports 11. 2021.

Reseach Advising

- **Arnav Sukhija**: Time-Adaptive Robotic Control, Bachelor thesis, 2025
- **Klemens Iten**: Scalable and Efficient Exploration via Intrinsic Rewards in Continuous-time Dynamical Systems, Semester project, 2025
- **Balduin Dettling**: Continuous-Time Approximate Dynamic Programming as an Active Learning Problem, Master thesis, 2024
- **Ivan Rodriguez**: Unsupervised reinforcement learning in the real-world, Master thesis, 2023
- **Jonas Hübotter**: Information-based transductive learning, Master thesis, 2023
- **Hong Chul Nam**: Continuous-time reinforcement learning in the real-world, Semester project, 2023
- **Balduin Dettling**: Approximate optimal control, Semester project, 2023
- **Fredrik Nestaas**: Theoretically Motivated Neural ODE Architectures for Stable Adjoint Behavior, Semester project, 2022
- **Laurens Lueg**: Approximate Bayesian Inference for Continual Learning of Dynamical Systems, Master Thesis 2022
- **Laurens Lueg**: Learning Latent Space Dynamics Models from High-Dimensional Data using Distributional Gradient Matching, Semester thesis, 2022
- **Cedric Della Casa**: Efficient Training of Deep Neural Dynamics Models, Master thesis, 2021

Skills Summary

- **Languages**: English (Full Professional), German (B2), Slovenian (Native), Latin (basics)
- **Programming Languages**: Python, C++, Matlab, Java, Go, Haskell, R
- **Frameworks**: Jax, PyTorch, Numpy, SciKit, Pandas
- **Tools**: Git, GitHub Actions, PostgreSQL
- **Soft Skills**: Teaching, Leadership, Time Management, Driving License

Honors

- ETH Medal for Master thesis - Feb 2021
- Faculty Prešeren award for my Bachelor thesis - Nov 2018
- International Math Competition (2nd prize (2018), 3rd prize (2017), Honourable Mention (2016)), IMO 2015
- During high school each year top 10 in Math National Competition, National Champion in 3rd year