Theo Wolf

DPhil Student, University of Oxford
theo@robots.ox.ac.uk • theo-wolf.com • TheodoreWolf • theo-wolf

Education

University of Oxford — **Oxford, UK**
DPhil in Autonomous Intelligent Machines and Systems — *Oct 2024 – Present*

- Supervised by **Prof. Jakob Foerster** and **Prof. Ingmar Posner.**
- Interests in **Simulations/World Models**, **Generalisation in RL** and **Meta-RL**.
- Current project: RL for **plasma magnetic control**.

University College London — **London, UK**
M.Sc in Machine Learning (Distinction) — *Sep 2021 – Sep 2022 (1y)*

- Focus on **ML theory**: Approximate/Variational Inference, **RL**, and Probabilistic and Unsupervised Learning.
- Thesis: *Reinforcement Learning for Climate Models*, supervised by **John Shawe-Taylor** and **Maria Pérez Ortiz**.
- Graded 85% and published at **NeurIPS 2023 Workshop on ML for Climate Change** .

University College London — **London, UK**
B.Sc in Astrophysics and Physical Chemistry (First Class) — *Sep 2018 – Jun 2021 (3y)*

- Focus: **mathematical modelling**, atmospheric physics, **chaotic systems**, and quantum theory.
- Project: *Review of methods for measuring the universe's expansion rate*, supervised by **Stephen Feeney**.

Work Experience

Gigaton (previously Carbon Re) — **London, UK**
Machine Learning Engineer — *Oct 2022 – Sep 2024 (2y)*

- Developed/maintained models (**PINNs**, **Kalman Filters**) for live process control in cement plants.
- Led R&D projects, including collaborations with the **UK Department of Energy Security and Net Zero**.
- Initiated and chaired the ML team's fortnightly **Journal Club**.

SuccessData — **London, UK**
Data Science Intern — *Jun 2021 – Sep 2021 (3m)*

- Built a **news sentiment classifier** for ENGIE's credit risk analysis team.
- Integrated the **Reuters API** with NLP models (**FinBERT, spaCy, flair**) in a real-time pipeline.
- Achieved **97% accuracy** distinguishing positive vs. negative company mentions.

Publications

- **Wolf** et al. "Model-Based Meta-Learning for Algorithm Discovery", *ICLR'2026 Workshop on World Models*. [Link]
- **Wolf** et al. "Can Reinforcement Learning support policy makers? A preliminary study with Integrated Assessment Models." *NeurIPS'2023 Workshop on Tackling Climate Change with Machine Learning*. [Link]
- Sarkar et al. "Evolution Strategies at the Hyperscale", *ICML'2026*. [Link]
- Goldie et al. "Procedural Generation of Algorithm Discovery Tasks in Machine Learning", *ICML'2026*. [Link]
- Navarro et al. "Do Machine Learning Climate Models Work in Changing Climate Dynamics", *arXiv preprint*. [Link]

Highlighted Projects

[Library] **Hyperoptax** — Parallel hyperparameter optimization in pure JAX.

[Blog] **KANs, simply explained (TDS Best of 2024)** — Critique of Kolmogorov–Arnold Networks.

[Blog] **Gaussian Processes from Scratch** — Step-by-step GP implementation in NumPy.

Skills

Technologies: JAX, PyTorch, TensorFlow, Scikit-learn, Docker, Git, WandB, HTML/CSS.

Communication: Teaching, Technical writing, and invited talks on ML and RL.

Languages: English (Fluent), French (Fluent), German (Advanced), Spanish (Basic).