

Daniel Holmberg

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🌐 danielholmberg.fi

EXPERIENCE

University of California, Santa Barbara.....

Visiting Researcher Aug 2025 - Jul 2026, Santa Barbara

- Fulbright Finland Scholar at the Geometric Intelligence Lab, focusing on deep learning on graph structured data.
- Implemented the first calibrated ensemble forecasting of global ocean physics using a probabilistic graph neural network.

Euro-Mediterranean Center on Climate Change.....

Visiting Researcher Oct 2024 - Apr 2025, Bologna

- Engineered a faster, more accurate ML model as an alternative to the operational numerical Mediterranean Sea forecasting system.

South African Radio Astronomy Observatory.....

Visiting Researcher Jan 2024 - Apr 2024, Cape Town

- Applied deep learning based computer vision techniques to deconvolve radio interferometric images from the MeerKAT telescope.

CERN.....

Machine Learning Engineer Jul 2021 - Jun 2022, Geneva

- Built and deployed end-to-end pipelines to execute novel deep learning based energy calibration techniques for particle jets.
- Created workflows for the Kubeflow cloud platform deployed in beta at the IT department, that we got to present at KubeCon.

Fjuul.....

Fullstack Engineer Mar 2020 - Apr 2021, Helsinki

- Developed and maintained features of a commercial health tracking mobile application that partnered with insurance companies.
- Integrated third-party Withings tracker functionality into the application, covering both backend in Node.js and frontend in React.

PROJECTS

D. Holmberg, J. Oskarsson, E. Larsson, F. Lindsten, T. Roos. *Njord: A Probabilistic Graph Neural Network for Ensemble Ocean Forecasting.*

🔗 <https://arxiv.org/abs/2605.15470>

D. Holmberg, et al. *Deterministic and probabilistic neural surrogates of global hybrid-Vlasov simulations.* arXiv:2601.12614/NeurIPS ML4PS.

🔗 <https://github.com/fmihpc/spacecast>

D. Holmberg, E. Clementi, I. Epicoco, T. Roos. *Accurate Mediterranean Sea forecasting via graph-based deep learning.* Scientific Reports (2025).

🔗 <https://github.com/deinal/seacast>

D. Holmberg, D. Golubovic and H. Kirschenmann. *Jet Energy Calibration with Deep Learning as a Kubeflow Pipeline.* Computing and Software for Big Science (2023).

🔗 <https://gitlab.cern.ch/dholmber/jec-pipeline>

SUMMARY

Results-oriented researcher and software engineer with extensive international experience in Europe, the US, and even South Africa. Expert on deep learning, with a proven track record of developing predictive models and scaling up training on both cloud and HPC resources for scientific applications.

SKILLS

Languages	Python, JavaScript
Frameworks	PyTorch, TensorFlow, Node.js, React
Cloud	GCP, OpenStack, Kubeflow, Wandb
DevOps	Docker, Git, CI/CD
OS	Linux, macOS
Misc.	HPC, GNNs, Physics Simulation, Forecasting

EDUCATION

University of Helsinki

Ph.D. in Computer Science (done 10/2026)

Thesis: *Graph Neural Networks for Modeling Spatiotemporal Systems in Science*

University of Helsinki

M.Sc. in Data Science

Thesis: *Jet Energy Corrections with Graph Neural Network Regression*

Grade: 5/5, Course GPA: 4.3/5

GRANTS & AWARDS

Fulbright-KAUTE Foundation Award
UC Santa Barbara

HIIT Travel Grant
Nordic Probabilistic AI School

Nylands Nation Research Grant
University of Helsinki

LANGUAGES

- Swedish (Native)
- English (Fluent)
- Finnish (Fluent)
- German (Beginner)