Erling Devold

Researcher in Machine Learning and Computer Vision

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Profile

Researcher focused on self-supervised and multimodal representation learning for visual and acoustic data. My work spans foundational methods for patch-level understanding, multimodal fusion, and domain adaptation applied to marine imaging and environmental monitoring. I am particularly interested in how vision foundation models learn structure and semantics across modalities.

Education

2018–2023 **M.Sc. in Computer Science**, *UiT The Arctic University of Norway*
Specialization in machine learning. Thesis: *Through Space and Time* (hdl)

Experience

2023–Present **Researcher (M.Sc.)**, *SINTEF AS, Tromsø*
Leading development of deep learning methods for marine imaging and environmental monitoring. Focus areas include representation learning, multimodal vision, and acoustic data analysis.

- Work-package lead in FHF project *SannTrål*: real-time trawl catch monitoring with stereo imaging.
- Principal researcher in *JellySafe*: detection and segmentation of barbed-wire jellyfish (*Apolemia*).
- Contributor to EU Horizon *ILIAD*: scalable machine learning for aquaculture risk assessment.
- Collaboration with NASA JPL in *SubZeroSpace* for self-supervised acoustic imaging under ice.

2021–2022 **Engineer (Teaching Assistant)**, *UiT Department of Computer Science*
Developed AirBit2 microcontroller platform for STEM education; designed teaching modules in Python for sensor programming and data collection.

Selected Projects

SannTrål (FHF) Work-package lead developing real-time trawl monitoring using stereo camera systems and foundation model adapters.

JellySafe (FHF) Researcher on transformer-based segmentation of barbed-wire jellyfish and multimodal CLIP-style modeling.

ILIAD (EU Horizon) Developing scalable ML pipelines for ocean monitoring using geospatial and environmental data fusion.

SubZeroSpace (RCN/NASA) Self-supervised acoustic representation learning for under-ice exploration in collaboration with NASA JPL.

Aktivitetsplanlegger (BUFDIR) Led development of accessible planner app using React and FastAPI for inclusive user interfaces.

Publications and Presentations

2023 **Through Space and Time**, M.Sc. Thesis, UiT The Arctic University of Norway.

2025 **EchoFlow** (under review, JOSS): a containerised workflow for Kongsberg EK80 echosounder data.

2025 **Automated detection of barbed-wire jellyfish (Apolemia sp.) in citizen science imagery**, Aquaculture Europe Conference.

Skills

Machine Learning	PyTorch, DINOv2, MAE, CLIP, Swin-Transformer, Multiple Instance Learning
Engineering	Hydra, Dask, Docker, DVC, FiftyOne, FastAPI
Software	Python, TypeScript, React, Git, Linux

Languages

Norwegian	Native
English	Fluent