Håvard Tveit Ihle

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AI researcher focused on evaluating large language models and multimodal models, as well as developing and implementing machine learning models for automatic analysis of a wide range of data, including text, images and time-series, for the Norwegian Defence Research Establishment. Especially interested in generalization, robustness and evaluation of machine learning models. I'm a former astrophysicist with a focus on data analysis for Cosmological experiments, where I led the development of the end-to-end data analysis pipeline for the COMAP experiment, from raw telescope data to constraints on astrophysical parameters. I have also worked on data analysis for cosmic microwave background experiments within the Cosmoglobe collaboration.

Experience

Research

Fall 2023 – **AI Researcher**, *Norwegian Defence Research Establishment*
Created WeirdML, a benchmark for evaluating LLM capabilities on novel ML tasks (included in Epoch AI's Benchmarking Hub, supported by METR)

Spring 2021-Fall 2023 **Postdoctoral Fellow in Cosmology**, *Institute of Theoretical Astrophysics, University of Oslo (UiO)*

Summer 2014 **Research assistant**, *UiO*
Implementing a wavelet-based method to detect point sources in the Planck CMB-data.

Supervision

2021-2023 **PhD supervisor**, *UiO*, Supervised two PhD students in Cosmology

2019-2021 **Master thesis supervisor**, *UiO*, Supervising masters students in Cosmology
One master student finished summer 2020. Three students finished summer 2021.

Teaching

2021–2022 **Lecturer**, *UiO*, Cosmological Component Separation (AST9240)

Spring 2018 **Lecturer**, *UiO*, Cosmology 2 (AST5220/9420)

Education

2016–2021 **PhD in Cosmology**, *Institute of Theoretical Astrophysics, UiO*, "Bayesian Data Analysis for Intensity Mapping and CMB Experiments"

2013–2016 **Master in Astronomy**, *Institute of Theoretical Astrophysics, UiO*, "Late Kinetic Decoupling of Dark Matter"

Awards

2022 **His Majesty The King's gold medal for best doctoral thesis in the Faculty of Mathematics and Natural Sciences at the University of Oslo in 2021**

Publications

As quantified by NASA/ADS, I have published a total of 51 papers in the field of Cosmology as of Dec. 2024, resulting in a total of 722 citations and an h-index of 17

Skills

Programming (python, fortran, C++), data visualization (matplotlib), statistical methods/modeling/inference, bayesian data analysis, machine learning (pytorch), high performance computing (MPI, openmp, numpy, scipy)