

INAUGURATION TALK



TALK

TITLE:

Advancing Geoscience through
Large-Scale AI and Remote
Sensing with Supercomputing

ABSTRACT

The explosion of geospatial data in the new information era has created unprecedented opportunities and challenges for geoscience. This talk explores how advancements in AI, particularly unsupervised and self-supervised learning, are revolutionizing Earth observation through Foundation Models (FMs)—large-scale AI models trained on diverse datasets to extract versatile features. By leveraging synergies between these models and High-Performance Computing (HPC) systems, researchers at the University of Iceland's Remote Sensing Simulation and Data Lab, in collaboration with the Jülich Supercomputing Center in Germany, are driving breakthroughs in applications like high-resolution land cover mapping and real-time disaster monitoring. The talk will highlight remote sensing and the interdisciplinary research that intersects AI, supercomputing, and remote sensing applications.

DR. JÓN ATLI BENEDIKTSSON

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CV

Jón Atli Benediktsson (born 19 May 1960) was the rector and president of the University of Iceland and is a professor in electrical and computer engineering at the university. His research fields are remote sensing, image analysis, pattern recognition, machine learning, data fusion, analysis of biomedical signals and signal processing. He has published over 400 scientific articles in these fields and is one of the most influential scientists in the world according to Publons' lists in 2018 and 2019.

Jón Atli has been with the University of Iceland since 1991, first as assistant professor of electrical engineering (1991-1994), associate professor of electrical engineering (1994-1996), and since 1996 as professor of electrical and computer engineering. During these years, he taught many courses, e.g., on pattern recognition, signal processing, probabilistic methods, circuit analysis, soft computation and remote sensing. Nine doctoral students have completed doctorates from the University of Iceland under his supervision.

Jón Atli has been very active in international collaboration and has taught in many countries. He has advised master's and doctoral students at several universities. He has also been a PhD opponent at many institutions and served on various doctoral committees on four continents. He established IEEE's Iceland Section in 2000 and was its founding chairman from 2000 to 2003.



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