

Webinar Series



Constructing a Digital Environment

Topic: Tackling diverse environmental prediction tasks with neural processes

Speaker: Tom Andersson

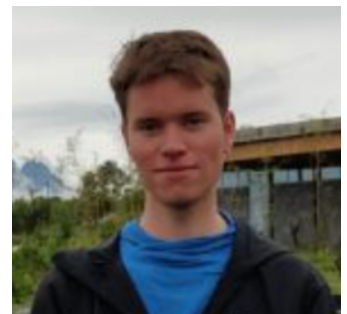
Time: Friday 4th August 11:00 GMT

Registration and further details:

https://ukri.zoom.us/webinar/register/WN_9odfE46BQI63U0wTm24Gzg

Tom is an ML Research Scientist at the British Antarctic Survey (BAS) AI Lab, where he researches and develops ML systems for monitoring and adapting to climate change. His work currently focusses on the application and implementation of neural processes in environmental sciences. Tom has used uncertainty quantification, interpretability, and active learning methods to build decision-support tools and his previous work includes *IceNet*, a sea ice forecasting AI system.

In this webinar, Tom will present recent advances and applications of neural processes (NPs) in environmental sciences. NPs are versatile deep learning models which can tackle a diverse array of environmental prediction problems, including sensor placement, downscaling, forecasting, and infilling missing satellite data. This versatility is enabled by modelling flexibility: NPs can ingest arbitrary sets of observations of point-based or gridded modalities, predict at arbitrary locations, and quantify prediction uncertainty. However, the flexibility of NPs can make them poorly suited to small-data settings, and open questions remain about how to optimise their performance. To answer these questions and accelerate research, Tom is developing an open-source Python package for environmental NP modelling, [DeepSensor](#), which will be presented in this webinar.



The **NERC Constructing a Digital Environment (CDE) programme** is running a series of online Webinars, aiming to develop the digitally enabled environment, benefitting scientists, policymakers, businesses, communities and individuals. Our seventh webinar series, led by Expert Network member Matt Fry, UKCEH, focusses on the development, use and application of Artificial Intelligence techniques in Environmental Science.



<https://digitalenvironment.org/cde-webinar-series>