

Conference 2024: The AI Frontier in Environmental Observation

Programme

7th March 2024

Virtual Event (via Zoom)

Recent advances in the field of Artificial Intelligence (AI) are beginning to revolutionise many human activities, including environmental observation. AI is increasingly being integrated into environmental monitoring systems to enhance the efficiency, accuracy, and scale of data collection and analysis. These developments are bringing both tremendous opportunities and formidable challenges for society and organisations, including those with environmental monitoring and observation remits and interests that contribute to the UK Environmental Observation Framework (UKEOF). The 4th UKEOF conference will discuss current applications of AI in the environmental observation sector, encompassing monitoring and modelling, as well as strategies, ethics, biases, risks and wider considerations associated with the application of AI. Speakers from across the environmental sector will provide examples of current initiatives that are harnessing AI in environmental observation, discussing the impact on their work and the lessons learnt. With keynote talks from Professor David Topping (University of Manchester) and Dr. Francesca Mazzi (Brunel University), our conference promises to both inform and inspire. Register now to join us and hear about advances in this field and engage in thought-provoking discussions with researchers, academics and other professionals, covering a wide range of AI-related topics.

09.30: Welcome and Introduction to UKEOF and the Conference (Launch of First Slido Question)

- **Dr. Ben Ditchburn** (UKEOF chair)

09.45: Opening Keynote

- Overarching introduction to AI and it's benefits in the Environmental Sector.
Prof. David Topping (University of Manchester)

10.15: Session 1

Speakers will provide examples of current initiatives that our harnessing AI in relation to environment monitoring and a variety of different environmental areas and discuss the impact on their work and lessons learnt.

- AI for Environmental Monitoring
Matt Fry (The Alan Turing Institute / UK Centre for Ecology & Hydrology)
- The Use of AI in the Development of Catchment Clustering and the Potential for Future AI Development
James Finnigan and Harriet Housam (Environment Agency)
- Application of AI to Images and Acoustics
Dr. Jenna Louise Lawson (UK Centre for Ecology & Hydrology)

11.00: Break (Launch of Second Slido Question)

11.15: Session 2

Speakers will provide examples of current initiatives that our harnessing AI in relation to environment modelling and a variety of different environmental areas and discuss the impact on their work and lessons learnt.

- Getting the Most out of Digital Twin Models
Dr. Alberto Arribas (National Oceanography Centre)
- Farm-scale Decision Supporting with Digital Twins
Prof. Paul Harris (Rothamsted Research)
- Combining Existing Modelling and AI Machine Learning
Andy Hodge & Paul Edmunds (Aquascope)

12.00: Lunch (Launch of final Slido Question)

13.15: Welcome back

- **Dr. Ben Ditchburn** (UKEOF chair)

13.20: Afternoon Keynote

- AI and SDGs: Governance and use cases
Dr. Francesca Mazzi (Brunel University)

13.50: Session 3

Speakers will provide insight into some of the strategical, ethical and bias issues that may affect AI, and discuss any wider consideration of using AI.

- The Impacts of ICT and AI
Prof. Adrian Friday (Lancaster University)
- AI Impact on Observations Strategy for Weather Forecasting
Dr. Jonathan Taylor (Met Office)
- Alan Turing Institute Environment and Sustainability Grand Challenge: Stakeholder Mapping and Community Strategy
Dr. Cassandra Gould van Praag (The Alan Turing Institute)

14.35: Panel Discussion

We welcome all our speakers back to the 'floor' and open up discussions about what we have heard today, and anything else relevant to using AI in the environmental sector.

15:15: Closing Remarks

- **Dr. Ben Ditchburn** (UKEOF chair)

15.25: Meeting close