



Application of AI to the Study of Environmental Risk

AI4ER Student Symposium 2022

Wednesday 07 Dec 2022, 12.15 -19.00

Venue: Lecture Theatre 1, Dept of Computer Science and Technology, William Gates Building, 15 JJ Thomson Ave, Cambridge CB3 0FD

12.15-12.55	Poster session and lunch		The Street
12.55 - 13.00	Emily Shuckburgh, Co-Director	Welcome	LT1
Session 1 – Chair: Grace Beaney Colverd			
13.00 - 13.15	Natalie Yao (online)	Identifying Ocean Submesoscale Activity from Vertical Density Profiles Using Machine Learning	LT1
13.15 - 13.30	Simon Mathis (online)	Harnessing molecular biology for tackling environmental problems	LT1
13.30 - 13.45	Joycelyn Longdon	Visualising Forest Sound: Justice-led Ecoacoustic Data Interaction	LT1
13.45 - 14.00	Katie Green	Ecological games on graphs with multi-agent reinforcement learning	LT1
14.00 – 14.10	Move to café area plus introduction to round table session with first and second year students		café
Session 2 – Round tables			
14.10 – 14.50	Round table sessions 2 x 20 min		café
14.50 – 15.10	Coffee break		The Street
15.10 - 16.10	Round table sessions contd. 3 x 20 min		café
16.10 – 16.15	Comfort break and move back to LT1		
Session 3 – Chair: Kenza Tazi			
16.15 – 16.30	Simon Thomas	Tropical Cyclone Storm Surge Emulation around New Orleans	LT1
16.30 - 16.45	Luke Cullen	Multimodal graph representation for estimating uncertainty-bound supply chain emissions	LT1

16.45- 17.00	Yilin Li	Implementing a linear mixed model to analyse associations between personal exposure measurements and health outcomes, the AIRLESS as a case study	LT1
17.00 - 17.15	Ira Shokar	Learning Reduced-Order Stochastic Dynamics to study Zonal Jets	LT1
17.15 -19.00	Poster session and networking with refreshments		The Street

Round table leaders

Name	PhD topic
Arduin Findeis	Applying reinforcement learning to grid-connected energy systems
Grace Beaney Colverd	Modelling the material and emissions impacts of the interventions required to decarbonise the building stock.
Hamish Campbell	An accurate, scalable and low-cost method for assessing peatland regeneration projects using artificial intelligence methods
Herbie Bradley	Chemical mechanism emulation in climate model simulations for exascale supercomputing applications
Jonathan Roberts	Large-scale perception and visualisation of environmental data using 'few-shot' learning
Madeline Lisaius	Self-Supervised Learning Approaches in Earth Observation Leveraging Physical Knowledge about the Interaction of Electro-Magnetic Radiation with Vegetation Canopies as Applied to Agriculture
Matt Allen	Few-shot learning for scalable forest monitoring from remote sensing data
Seb Hickman	Determining the risks and drivers of extreme ozone events during heatwaves with machine learning and causal inference
Sofija Stefanović	Monitoring impacts of exploratory mining with community citizen science and AI systems
Thomas Hojlund Dodd	Bayesian optimisation led design of biopolymer-based thermoset composites with enhanced recyclability