INTERNATIONAL CLEANUP CONFERENCE ADELAIDE 2026

Workshop - 2

Title	**Artificial Intelligence for Data Interpretation, Site Assessment and Monitoring of Contaminated Environments**	
Date and time	Sunday, 13 September 2026, 9:00 AM – 5:00 PM	
Duration	Full Day	
Venue	Adelaide Convention Centre*	
Presenters	Morning Session - Alvin Lal - Catherine Hansen	Afternoon Session - Liang Wang - Biswajeet Pradhan
Registration Fees	$ 680 incl GST (The workshop is fully catered and will be provided with morning, afternoon tea and lunch.)	

About this workshop

Artificial Intelligence (AI), Machine Learning (ML), GeoAI, and Earth Observation technologies are rapidly transforming the way environmental monitoring, contaminated site assessment, and remediation projects are undertaken. This one-day workshop brings together leading researchers and practitioners to showcase the latest advances, practical applications, and future opportunities of AI-driven environmental solutions.

Participants will gain insights into how AI is being applied to environmental data management, contaminant detection, risk assessment, predictive modelling, remote sensing, and decision-support systems. Through real-world case studies and demonstrations, attendees will learn how these emerging technologies can improve efficiency, reduce costs, enhance decision-making, and unlock new opportunities for environmental management and sustainable land stewardship..

Why Attend?

By attending this workshop, participants will:

- Understand the fundamentals of AI, Machine Learning, and GeoAI in environmental applications.
- Learn from real-world case studies demonstrating successful implementation of AI technologies.
- Discover how environmental data can be transformed into valuable assets for advanced analytics and decision-making.
- Explore the latest developments in Earth Observation, remote sensing, and spatial intelligence technologies.
- Gain practical insights into implementing AI tools for monitoring, assessment, remediation, and environmental management projects.
- Network with leading experts, researchers, consultants, regulators, and industry practitioners working at the forefront of environmental innovation.

Workshop attendees will receive

- 6.5 hrs of CPD point
- Presentation slides (as secured PDF) on USB
- A downloadable online resource folder on USB

Program

Workshop Program	
Morning Session	
9:00 - 9:10 AM	Welcome and Introduction
10:00 – 10:15 AM	**Morning Tea Break**
10:15 – 10:50 AM	The workshop continues
12:15 – 1:15 PM	**Lunch Break**
Afternoon Session	
1:15 – 3:00 PM	Workshop Continue
3:00 – 3:15 PM	**Afternoon Tea Break**
3:15 – 5:00 PM	The workshop continues incl. Q&A and wrap-up

Morning Session

The morning session focuses on the foundations and practical applications of AI and Machine Learning in environmental monitoring, assessment, remediation, and environmental data management.

Key Topics Covered

- Introduction to Artificial Intelligence and Machine Learning for environmental professionals.
- AI applications in contaminated site assessment, groundwater monitoring, and remediation projects.
- Case studies demonstrating how AI is improving environmental decision-making and project outcomes.
- Best-practice environmental data management strategies to prepare organisations for AI adoption.
- Building structured, accessible, and AI-ready environmental datasets from reports, spreadsheets, databases, and legacy systems.

Afternoon Session

The afternoon session explores advanced applications of GeoAI, Earth Observation, remote sensing, and cutting-edge machine learning technologies for environmental monitoring and sustainable land management.

Key Topics Covered

- GeoAI and Earth Observation technologies for environmental remediation and sustainable land management.
- Remote sensing and spatial intelligence tools for environmental monitoring, risk assessment, and decision support.
- AI-powered contaminant identification and prediction using environmental sensor and spectral data.
- Practical case studies covering PFAS, VOCs, hydrocarbons, heavy metals, soil assessment, and groundwater applications.
- Lessons learned, implementation challenges, and future opportunities for AI-driven environmental solutions.

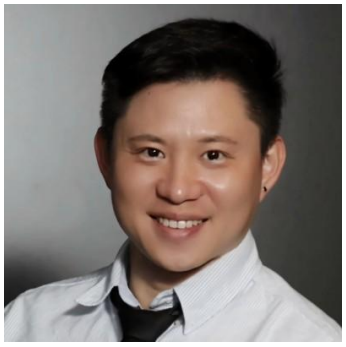
Presenters

Distinguished Professor Biswajeet Pradhan (SMIEEE; Alexander von Humboldt Fellow)
Distinguished Professor and Director
Centre for Advanced Modelling and Geospatial Information Systems (CAMGIS)
Faculty of Engineering and IT
University of Technology Sydney

Professor Biswajeet Pradhan is a Distinguished Professor and Director of the Centre for Advanced Modelling and Geospatial Information Systems (CAMGIS) at the University of Technology Sydney (UTS), Australia. He is internationally recognised for his contributions to GeoAI, Earth observation, remote sensing, GIS, spatial modelling, environmental risk assessment, and natural hazard management. Professor Pradhan has published more than 900 scientific publications and is consistently recognised among the world's most highly cited researchers by Clarivate Analytics. His research integrates artificial intelligence, satellite remote sensing, geospatial analytics, and environmental modelling to address complex challenges related to land degradation, environmental contamination, water resources, climate resilience, infrastructure sustainability, and disaster risk reduction. He has successfully led numerous internationally funded research projects and received multiple prestigious awards for research excellence. His current work focuses on developing AI-enabled spatial intelligence systems to support sustainable environmental management, remediation planning, and evidence-based decision-making.

Catherine Hansen
Senior Business Development and Implementation Manager, Australia-Pacific
EScIS

Catherine Hansen is an Environmental Data Management leader from Earth Science Information Systems. With over 15 years of experience, Catherine has supported clients across various industries, including consulting, mining, infrastructure, transport, waste, and government. She has been a global leader in the field, including the development of workflows for nation-wide project data collection and management and is an expert in the use of multiple software systems including bespoke client implementations. Her work focuses on data management literacy, sharing best practices and innovative approaches to digital data management, enhancing decision-making and capability. Catherine's insights into the integration of technology and environmental science have transformed data quality and accessibility for clients and project teams.



Dr Liang Wang
Senior Research Fellow, School of Science,
University of Newcastle, NSW and crcCARE

Dr. Liang Wang is an environmental analytical scientist whose research focuses on the application of machine learning, chemometrics, and advanced analytical technologies for contaminated site assessment and environmental risk management. Since 2011, he has developed innovative field-based approaches for characterizing petroleum and chlorinated hydrocarbons using FTIR spectroscopy, portable GC–MS, and artificial intelligence. He is an inventor on three international patents and has translated his innovations into practical software platforms, including the trademarked tools irCARE™ and probeCARE™. As a full-stack programmer, he has also developed several online decision-support systems for contaminated land management through crcCARE. His work has produced over 50 publications and technology outputs and has been recognized by the 2015 PerkinElmer Early Career Research Award for Innovation in Analytical Science and the 2019 Agilent Technologies Innovation in Analytical Sciences Award.

Dr Alvin Lal
Research Director and AI Specialist, crcCARE

Dr Alvin Lal is the Research Director at crcCARE and an Artificial Intelligence (AI) specialist with extensive experience in environmental monitoring, assessment, remediation, and groundwater management. He works closely with industry, government agencies, and research partners to develop innovative solutions to complex environmental challenges. Dr Lal holds a PhD in Hydrogeology from James Cook University, Australia, and has more than 10 years of experience applying AI, machine learning, and advanced data analytics to environmental and remediation projects across Australia and internationally. He manages a diverse portfolio of research projects and leads multidisciplinary teams focused on developing practical, science-based solutions for contaminated land and groundwater management. In addition, he supervises postgraduate research students and actively contributes to capacity building within the environmental sector. Dr Lal is the author and co-author of numerous peer-reviewed journal papers, book chapters, and books, with research interests spanning artificial intelligence, environmental monitoring, groundwater systems, PFAS management, and sustainable remediation technologies.

Notes:

(*) Workshop room details will be advised closer to the event date.
(+) Time slots suggested in the program are indicative and may vary slightly based on the final program.
- Delegates are required to bring their laptop to complete hands-on exercises and access workshop resources.