

Demystifying AI through a Modelling and Systems Lens

Date: Monday, 11 August 2025

Time: 13:30 – 17:00

Location: City 2, Adelaide Convention Centre

This Master Class is perfect for:

- **Simulation practitioners** looking to understand and/or employ AI/ML
- **Novice users of AI** looking to incorporate AI-Intensive systems into their work
- **Systems engineers** with minimal background in AI/ML development

Why attend:

- Navigate the Challenges of AI Transparency and Explainability
- Ensure Responsible and Transparent AI Development and Deployment
- Drive Sustainable Integration of AI into Workplace Systems
- Align AI Initiatives with Business and Stakeholder Needs

What to Expect:

This tutorial is for those who have interest and/or minimal knowledge in AI/ML and provides an overview of the technology and of its underpinning in concepts from M&S and Systems Thinking. It includes some basic statistics, ML constructs and an overview of more specialised methods such as Neural Networks that are having a major impact in modern systems. Generative AI will be introduced.

It is recognised that AI projects need their own methodology that is different to that used in software only projects. The data used to train ML models is a fundamental component of the system itself. There are several Life Cycle models currently used in Data Science projects. These Data Science life-cycle models will be mapped to a Systems Engineering approach. Concepts and principles from systems thinking, modelling and simulation and situation awareness are summarised, as foundational building blocks for integration into evolutionary SE life-cycle processes.

A summary will be provided of the landscape of the regulatory frameworks being developed here in Australia and overseas.

Learning Outcomes

- Understand the importance of AI transparency and explainability for governance, compliance, and stakeholder trust.
- Be better equipped to make informed decisions on integrating AI into workplace systems with a focus on alignment, accountability, and long-term value.
- Understand how systems engineering approaches may be refined and mapped to AI project lifecycles.
- Recognise how systems engineering principles can be applied to reduce risk and improve outcomes in AI-driven projects.

Presenters:



Dr Andrew Madry – Is a seasoned systems and data scientist specialising in sonar and signal processing with extensive experience across defence and medical devices. Analytical software developed by Andrew is used by leading cardiac electrophysiology researchers, including the Cleveland Clinic, to understand abnormal heart rhythms. His recent work has been in the Data Science field with engagement by government organisations including NDIS.



Jawahar Bhalla - JB is an advocate and educator in the application of Systems Thinking, Modelling and Simulation as enabling pillars for understanding complexities, and improving culture, safety and performance. He has served on the Simulation Australasia Board, as Technical Director and President of SESA and is a current PhD Candidate researching the SE and Assurance of Ai-Intensive systems.