

# EXPLAINABLE AI FOR THE DISCOVERY AND CONTROL OF COMPLEX SYSTEMS IN ENGINEERING AND APPLIED SCIENCES

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## ABSTRACT

The increasing integration of artificial intelligence (AI) into engineering and applied sciences is reshaping our ability to better understand and potentially control complex systems. Nevertheless, the inherent opacity of many AI methodologies, notably deep learning, frequently restricts their deployment in many applications. Recent advances in explainable AI (XAI) have begun addressing these issues by enabling interpretable insights into AI-driven predictions and decisions. This mini symposium brings together leading researchers and practitioners to showcase state-of-the-art developments in XAI for complex systems arising in engineering and applied sciences. We encourage submissions on topics including mechanistic interpretability, post-hoc interpretability, and causal inference, to show how these methods are accelerating scientific discovery and enabling the control of complex systems. Examples of work in this space include [1] for mechanistic interpretability, [2] for post-hoc interpretability, [3] for XAI in scientific discovery, and [4] for XAI in control. The mini symposium aims to bring the community together, around the central topic of XAI, encouraging interdisciplinary collaboration across different applied disciplines.

## REFERENCES

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