

DEPARTMENT OF COMPUTER SCIENCE

SEMINAR

2024 SERIES

Co-Evolved Learning Systems for Scientific Computing

DATE & TIME

27 FEB 2024 (TUE) 11:15 AM - 12:15 PM

ONLINE VIA ZOOM



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ABSTRACT

The synergising of AI and scientific principles is emerging as a vibrant area of research, marked by a reciprocal and co-evolving relationship. This collaboration is propelling advancements in scientific discovery and AI development, as evidenced by the growing interest from the foundational science and machine learning communities. Science, with its centuries-old tradition of solving complex problems through evidence-based methods, and AI, with its data-driven approaches aimed at enhancing efficiency and generalisation, are converging to open up new frontiers. This convergence allows each field to complement the other, forming a closed-loop, co-evolved system. This presentation will explore how AI can enhance various critical scientific domains, mainly focusing on computational physics. The first part of the talk will highlight critical studies demonstrating how machine learning can expedite traditional physical simulations and optimisation tasks. Then, we will excavate how fundamental physical or scientific knowledge can advance general machine-learning tasks. Finally, discussing future work, I will outline potential new frontiers in this exciting field and propose ways to revitalise this prosperous study area.



SPEAKER'S
BIOGRAPHY



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