Abstract:

While the mainstream narrative around robotics often focuses on replacing labor in ageing, high-wage economies, the true potential of embodied intelligence lies in solving challenges of scale, safety, and productivity. This address explores the transformative role of Physical AI—the convergence of advanced perception, real-time control, and embodied intelligence—tailored to rapidly developing economies.

Moving beyond traditional factory automation, the presentation examines how robotics serves as a versatile platform across critical national priorities. In renewable energy and infrastructure, autonomous field systems can inspect and maintain gigawatt-scale solar installations and vital civil networks in harsh environments. In agriculture, lightweight, vision-guided robotics offer precision crop management and post-harvest sorting to protect yields and strengthen food supply chains. Furthermore, collaborative robotics functions as an intelligent tool to upskill a youthful workforce, enhancing human safety, technical precision, and overall capability. Prof. Corke will outline practical pathways for engineering robust, cost-effective robotic solutions and highlight how accessible software architectures can accelerate domestic innovation ecosystems.