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[INVITED] From Data to Discovery: AI in Radio Astronomy

Monday, 8 July 2024 15:10 (40 minutes)

The field of radio astronomy is entering a new era, driven by the Square Kilometre Array (SKA) and its precursors. As we are in the Big Data era, the integration of machine learning (ML) and deep learning (DL) techniques has become crucial to address the complex challenges posed by large and complicated datasets. This talk will explore the transformative potential of AI in radio astronomy, focusing on specific examples from SKA precursor surveys and data challenges. Key areas of focus will include data processing, source detection and classification, and predictive analysis and discovery of unkonwns. Notable examples from SKA precursor surveys, such as the Australian SKA Pathfinder (ASKAP), will be presented to illustrate how AI is improving the processing and analysis of astronomical data. In addition, the talk will address the data challenges of the SKA, emphasising its role in fostering innovation and collaboration within the scientific community. Finally, we will outlook on the future of AI in radio astronomy, discussing ongoing research, potential advances, and upcoming challenges. This talk aims to inspire further exploration and collaboration in this exciting interdisciplinary field.

Presenter: AN, Tao

Session Classification: Past and future multiwavelength all-sky surveys