THE ASTRONOMY RESEARCH CENTRE

ARCNet SEMINAR

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"So you want to use machine learning in your research, but don't know where to start?"

Abstract

Artificial intelligence (AI), specially Deep (Machine) Learning applications are already ubiquitous in everyday use. Deep Learning algorithms, called Neural Networks, thrive on Big Data, the happy 'problem' we now face of enormous amounts of data available in this digital era. In astronomy too, telescopes will soon routinely produce terabytes of data every night, and will need machine intelligence to help analyze and draw inferences. Piggybacked on the impressive recent advances in high performance computing, neural networks are trained on these available large datasets to then perform a variety of complex tasks directly applicable to astronomical analyses, such as identifying subtle patterns in the data, classification and parameter estimation, realtime decision making, forecasting, making recommendations based on experience, and so on. In this presentation, we aim to provide an overview of this rapidly burgeoning specialization in astronomy, explain in simple terms the different classes of AI tools, especially neural nets, their construction and working, and illustrate these principles with a working model.

Thursday, October 17, 2019
2:30 p.m.
Clearihue Building Room D131