

Machine Learning for Particle Accelerators

The last few years have seen a strong increase in uptake of machine learning (ML) techniques in the domain of particle accelerators. ML techniques have been used in a number of applications, from anomaly detection to surrogate modelling, virtual diagnostics, tuning and control as well as advanced data analysis. This talk will explore the different applications where ML is becoming an increasingly valuable tool to meet new demands for beam energy, brightness, reliability and stability, and will review several successful case studies in a number of particle accelerator facilities.