

The talk will present how advanced machine learning innovatively and effectively learns from data to support data-driven decision-making in uncertain, complex and dynamic situations. Originally solely model-based, decision support systems have evolved in line with the increasing availability of data and computational power to be based on predictions formed by machine learning patterns. This talk will present a set of advanced machine learning theories, methodologies and algorithms to support cross-domain decision-making in data insufficient situations and to increase prediction in ever-changing complex data stream settings. These new developments enhance data-driven prediction, personalised recommendation and decision support systems in big data environments.