
Foundations of Interactive Adaptive Learning

Georg Kreml

Information and Computing Sciences, Utrecht University, Utrecht
g.m.kreml@uu.nl

Abstract. This part starts with the classic stream mining paradigm. In its context, we discuss the challenges posed by non-stationarity and limitations in processing, storage, and supervision capacities. We briefly summarize related techniques, e.g. for incremental processing, forgetting, and change detection. Furthermore, we introduce techniques for optimising the interaction of a machine learning system with an oracle such as a human supervisor. We review active machine learning techniques, with focus on adaptive active learning for evolving and streaming data. We discuss recent advances and conclude with an overview on open research questions in adaptive active machine learning.