

Prof. Dr. Jörg Lücke: "Novel Learning Algorithms for Efficient Unsupervised and Semi-Supervised Networks"



In the context of the Research Colloquium Business Informatics and Data Science Prof. Dr. Jörg Lücke, Professor for Machine Learning at the University of Oldenburg, will give a lecture on "Novel Learning Algorithms for Efficient Unsupervised and Semi-Supervised Networks".

Date and location: June 1, 2018 12:15 UC 14.102a

Abstract:

Ever increasing amounts of data require increasingly efficient learning algorithms. Furthermore, it becomes increasingly difficult to provide sufficient amounts of labels for supervised learning. Unsupervised and semi-supervised algorithms have, therefore, been increasingly intensively studied in recent years. I will first discuss some general challenges for the training of semi-supervised classifiers, before I introduce a novel neural network for semi-supervised learning which is derived from maximum likelihood principles. I briefly elaborate on the distinguishing features of the network, and show results on standard benchmarks. The network's performance is then critically compared to other approaches - and I discuss the general requirement of an empirical Occam's Razor for such comparisons. Following the discussion of semi-supervised classifiers, the last part of my talk will discuss efficient and 'black box' unsupervised learning. Applications to basic tasks like clustering and to more complex Bayesian Networks are presented and future research directions are sketched out.