

Ole Winther

Gaussian processes, expectation propagation and beyond

Gaussian processes provide a versatile tool for flexible modeling. The presentation will provide a practically oriented introduction/recap of Gaussian processes and expectation propagation (EP) based inference. I will use examples from our paper (Opper, Paquet and Winther, JMLR, 2013) to illustrate when one can expect EP to work well and when not and also briefly show how cumulants can be used to systematically correct EP predictions. To prepare for the exercise please install and test a Gaussian process package such as becs.aalto.fi/en/research/bayes/gpstuff/ or github.com/SheffieldML/GPy.