



Contribution ID: 12

Type: not specified

Variational Inference for Blind Image Deconvolution

Thursday, 24 June 2021 15:20 (20 minutes)

Blind image deconvolution aims on recovering sharp image from a blurred one while the blur is unknown. It is a highly ill-posed problem requiring suitable regularization. One of the commonly used approaches for solving this problem is variational Bayesian inference. Hierarchical Bayesian models allow for a good representation of both sharp image and blur kernel and Variational Bayes can be used to find posterior distributions. While Variational Bayes offers easy optimization, it is very restrictive when it comes to the choices of prior distributions. For example, if the blur is spatially variant, finding solution under this framework would be very complicated. Higher flexibility could be achieved via numerical optimization of evidence lower bound, which does not require the distributions to be from conjugate system. These two methods - Variational Bayes and ELBO optimization - will be compared in this presentation.

Primary author: BROŽOVÁ, Antonie (Department of Mathematics, FNSPE, Czech Technical University in Prague)

Co-author: Dr ŠMÍDL, Václav (Institute of Information Theory and Automation of the Czech Academy of Sciences)

Presenter: BROŽOVÁ, Antonie (Department of Mathematics, FNSPE, Czech Technical University in Prague)

Session Classification: Stochastic Monitoring Systems