

INFORMATION GEOMETRY OF PROPAGATION ALGORITHMS AND APPROXIMATE INFERENCE

SHIRO IKEDA

THE INSTITUTE OF STATISTICAL MATHEMATICS

Stochastic inference is an important problem and appears in many fields, including statistics, machine learning, physics and information theory. Recently, as the size of the problems increase, there are a lot of cases where the exact inference is computationally intractable and approximate inference is widely used. In such cases, local propagation algorithms, including belief propagation algorithm, are commonly used, and giving great success. The author have analyzed the convergence property and accuracy of the belief propagation algorithm based on information geometry. In this presentation, the author show how we can extend the analysis to wider class of propagation algorithms.