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Scaling up Bayesian variational inference using distributed computing clusters

Andrés R. Masegosa, Ana M. Martínez, Helge Langseth, Thomas D. Nielsen,
Antonio Salmerón et al.

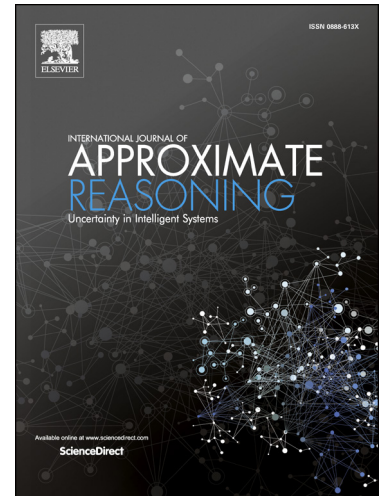
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Highlights

- It is a challenging problem to perform Bayesian inference over modern data sets, which does not fit into the main memory of a computer.
- Stochastic methods have been so far the main approach to scale up Bayesian inference for this problem.
- Modern distributed computing frameworks such as Apache Spark or Apache Flink provide a simple approach for efficiently handling iterative methods processing data stored in a distributed computing cluster.
- This paper proposes alternative approaches for scaling up Bayesian inference using modern distributed computing frameworks.
- This approach is derived from new theoretical insights from variational message passing algorithms.
- Extensive experimental evaluation shows that our approach outperforms other state of the art approaches and scale up to problems with billions of random variables..

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