Beyond ULL

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Summary

Outline

1 DGMs

Beyond VAEs

Beyond Gaussian latent variables

- automatic differentiation VI (Kucukelbir et al., 2017)

Beyond known densities

- Normalising flows (Rezende and Mohamed, 2015; Kingma et al., 2016)

Literature I

Diederik P Kingma, Tim Salimans, Rafal Jozefowicz, Xi Chen, Ilya Sutskever, and Max Welling. Improved variational inference with inverse autoregressive flow. In *Advances in Neural Information Processing Systems*, pages 4743–4751, 2016.

Alp Kucukelbir, Dustin Tran, Rajesh Ranganath, Andrew Gelman, and David M. Blei. Automatic differentiation variational inference. *Journal of Machine Learning Research*, 18(14):1–45, 2017. URL http://jmlr.org/papers/v18/16-107.html.

Danilo Jimenez Rezende and Shakir Mohamed. Variational inference with normalizing flows. In *Proceedings of the 32Nd International Conference on International Conference on Machine Learning - Volume 37*, ICML'15, pages 1530–1538. JMLR.org, 2015. URL http://dl.acm.org/citation.cfm?id=3045118.3045281.