Multilingual Machine Translation using Normalizing flows for low resource languages

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Normalizing flows [1] are generative models that try to capture arbitrary probability distributions in a way that both density estimation and sampling are relatively easy. While they have successfully been used in Computer Vision [2,3], their use in NLP is still limited. In computer vision, normalizing flows are often used in domain transfer applications [4].

Machine translation (MT) can also be viewed as domain transfer from one language to another. In this project, we take inspiration from [5] and [6] to explore the possibility of using normalizing flows for Multilingual MT for low resource languages, with or without parallel data.

[1] https://blog.evjang.com/2018/01/nf1.html
[2] https://arxiv.org/abs/1410.8516
[3] https://arxiv.org/abs/1605.08803
[4] https://arxiv.org/abs/1807.03039
[5] https://arxiv.org/abs/1711.00043
[6] https://openreview.net/attachment?id=S1lNELLKuN&name=pdf