How to make Conditional NF

We want a method of **Variational Inference** to approximate this distribution

$$q_\theta(\mathbf{x}\,|\,\mathbf{y}) \approx p(\mathbf{x}\,|\,\mathbf{y})$$

According to Marzouk et al. it is enough to have a map (NF) that satisfies this property:

$$T_\theta(\mathbf{y},\mathbf{x}) = \begin{bmatrix} T_{\theta_y}(\mathbf{y}) \\ T_{\theta_x}(\mathbf{y},\mathbf{x}) \end{bmatrix} = \begin{bmatrix} \mathbf{z_y} \\ \mathbf{z_x} \end{bmatrix}$$

Kovachki, Nikola, et al. "Conditional sampling with monotone GANs." arXiv preprint arXiv:2006.06755 (2020).
Marzouk, Youssef, et al. "An introduction to sampling via measure transport." arXiv preprint arXiv:1602.05023 (2016).

Conditional NF: Paradigm 1 cHINT

Conditional HINT explicitly makes the transport map on both y and x

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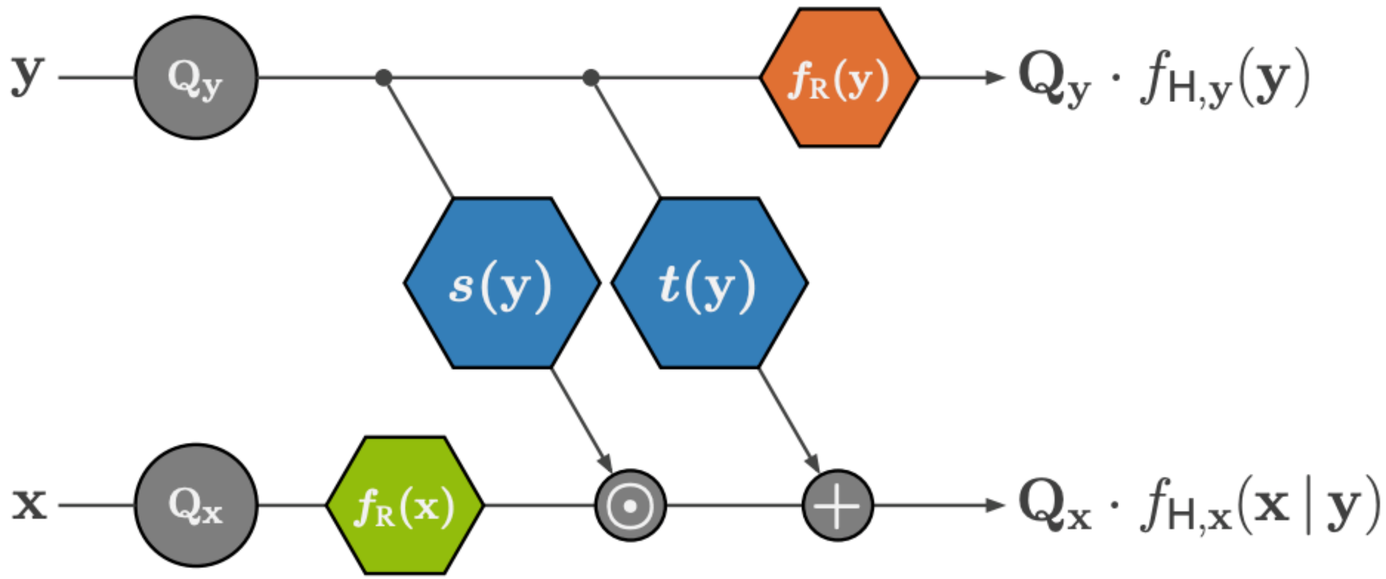

Kruse, Jakob, et al. "HINT: Hierarchical invertible neural transport for density estimation and Bayesian inference." arXiv preprint arXiv:1905.10687 (2019).