


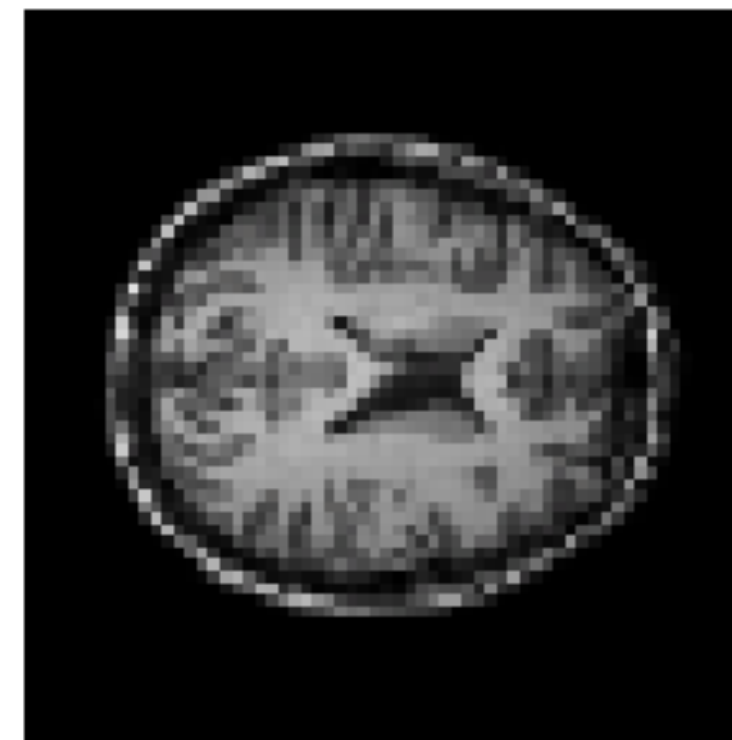
# Normalizing Flow as a trained prior

Allow for exact likelihood evaluation

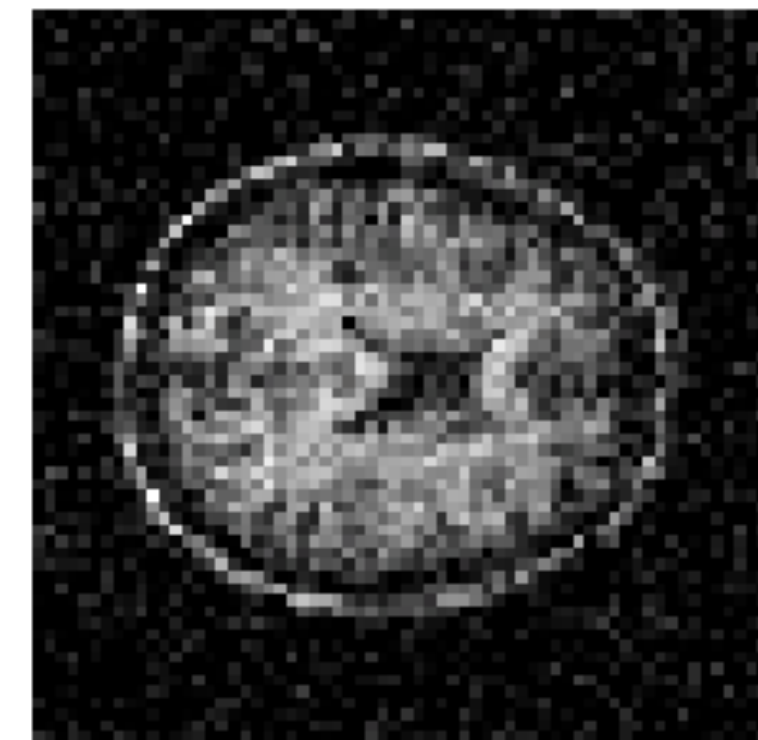
$$p_x(x = \text{) = 0.99$$

$$p_x(x = \text{) = 0.01$$

Calculated  $\log p(x) = 3.27$



Calculated  $\log p(x) = -24.28$



Train network and use as prior in bayesian formulation:

$$\operatorname{argmax}_{\mathbf{x}} p(\mathbf{x} | \mathbf{y}) = \operatorname{argmax}_{\mathbf{x}} \log p(\mathbf{y} | \mathbf{x}) + \log p(\mathbf{x})$$

# MAP Optimization with NFs

$$\operatorname{argmin}_{\mathbf{x}} \frac{1}{2} \|A\mathbf{x} - \mathbf{d}\|_2^2 + \log R(\mathbf{x})$$

Reparametrize optimization with trained generative network  $\mathbf{x} = G_{\theta}(\mathbf{z})$