

# MAP Optimization with NFs

Maximum a posteriori (MAP):

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

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

# MAP Optimization with NFs

Maximum a posteriori (MAP):

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

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

If noise is Gaussian then the data likelihood is given by  $\ell_2$ -norm data misfit