$$V(G, D) = \mathbb{E}_{p_{\text{data}}} \log D(\boldsymbol{x}) + \mathbb{E}_{p_{\text{generator}}} \left(\log \left(1 - D(\boldsymbol{x}) \right) \right)$$

	NCE (Gutmann and Hyvärinen 2010)	MLE	GAN
D	$D(x) = \frac{p_{\text{model}}(\boldsymbol{x})}{p_{\text{model}}(\boldsymbol{x}) + p_{\text{generator}}(\boldsymbol{x})}$		Neural network
Goal	$\operatorname{Learn}\ p_{\operatorname{model}}$		Learn $p_{ m generator}$
G update rule	None (G is fixed)	${ m Copy}p_{ m model}$ parameters	$\begin{array}{c} \text{Gradient} \\ \text{descent on } V \end{array}$
D update rule	Gradient ascent on V		