

1. Fletcher-Reeves:

$$\beta_t = \frac{\nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_t)^{\top} \nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_t)}{\nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_{t-1})^{\top} \nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_{t-1})}$$
(8.30)

$oldsymbol{ abla}_{oldsymbol{ heta}} J(oldsymbol{ heta}_{t-1})^{ op} abla_{oldsymbol{ heta}} J(oldsymbol{ heta}_{t-1})$	(t-1)



$\beta_t = 1$	$\frac{(\nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_t) - \nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_{t-1}))^{\top} \nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_t)}{\nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_t) + \nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_t)}$	(8.31)
	$\overline{\nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_{t-1})^{\top} \nabla_{\boldsymbol{\theta}} J(\boldsymbol{\theta}_{t-1})}$	



