

Question 1.3

Tuesday, April 21, 2020 6:00 PM

$$g_{0,k} = \nabla_{\theta} \|x_k - f_{\theta}(y_k)\|^2$$

$$= \nabla_{\theta} (x_k - f_{\theta}(y_k))^T (x_k - f_{\theta}(y_k))$$

$$g_{0,k} = \underbrace{-2 (x_k - f_{\theta}(y_k))^T}_{E_k^T} \cdot \nabla_{\theta} f_{\theta}(y_k)$$

$$E_k = -2 (x_k - f_{\theta}(y_k))$$