Active-Inference-Sensory-Attenuation-illusion - Gradients

September 10, 2020

Gradients

$$-\frac{\partial F}{\partial \begin{bmatrix} \mu_{x_i} \\ \mu_{x_e} \end{bmatrix}} = \begin{bmatrix} -\frac{-\mu_{\nu_i}h + \mu_{x_i}h^2 + d\mu_{x_i}h}{\sigma_x} - \frac{\mu_{x_e} + 2\mu_{x_i} - s_p - s_s}{\sigma_s} \\ -\frac{-\mu_{\nu_e}h + \mu_{x_e}h^2 + d\mu_{x_e}h}{\sigma_x} - \frac{\mu_{x_e} + \mu_{x_i} - s_s}{\sigma_s} \end{bmatrix}$$

$$-\frac{\partial F}{\partial \begin{bmatrix} d\mu_{x_i} \\ d\mu_{x_e} \end{bmatrix}} = \begin{bmatrix} -\frac{\left(-\mu_{\nu_i} + \mu_{x_i}h + d\mu_{x_i}\right)}{\sigma_x} \\ -\frac{\left(-\mu_{\nu_e} + \mu_{x_e}h + d\mu_{x_e}\right)}{\sigma_x} \end{bmatrix}$$

$$-\frac{\partial F}{\partial a} = -\frac{-\mu_{x_e}\frac{\partial s_s(a)}{\partial a} - \mu_{x_i}\frac{\partial s_p(a)}{\partial a} - \mu_{x_i}\frac{\partial s_s(a)}{\partial a} + s_p(a)\frac{\partial s_p(a)}{\partial a} + s_s(a)\frac{\partial s_s(a)}{\partial a}}{\sigma_s}$$