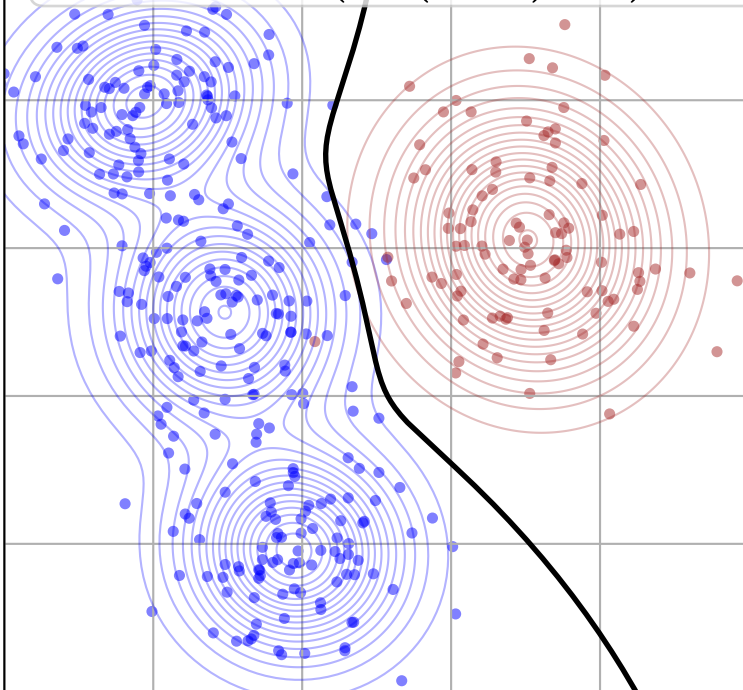$p(z|\text{``Class 1''}),\ z \sim \mathcal{D}^{(k')}$
$p(z|\text{``Class 2''}),\ z \sim \mathcal{D}^{(k')}$
$\bar{z} \sim \mathcal{S}(\mathcal{N}(0, I); \kappa)$ in Class 1
$\bar{z} \sim \mathcal{S}(\mathcal{N}(0, I); \kappa)$ in Class 2

$\mathcal{Z}_1$