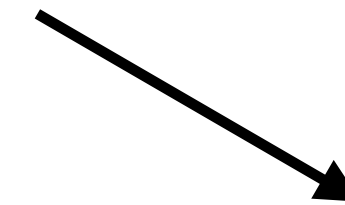
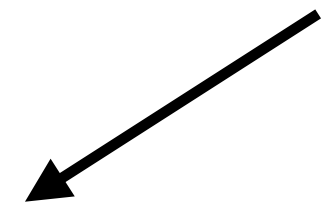


$$L_{emb} = L_{inter} + L_{intra}$$



To repulse different-instance embeddings away To attract same-instance embeddings together

Loss Function: Cartesian

Deep Pixel Embedding

$$L_{inter} = \frac{1}{C(C-1)} \sum_{\substack{c_A=1 \\ c_A \neq c_B}}^C \sum_{c_B=1}^C \left[\|\mu_{c_A} - \mu_{c_B}\| - 2\delta_1 \right]_+^2$$

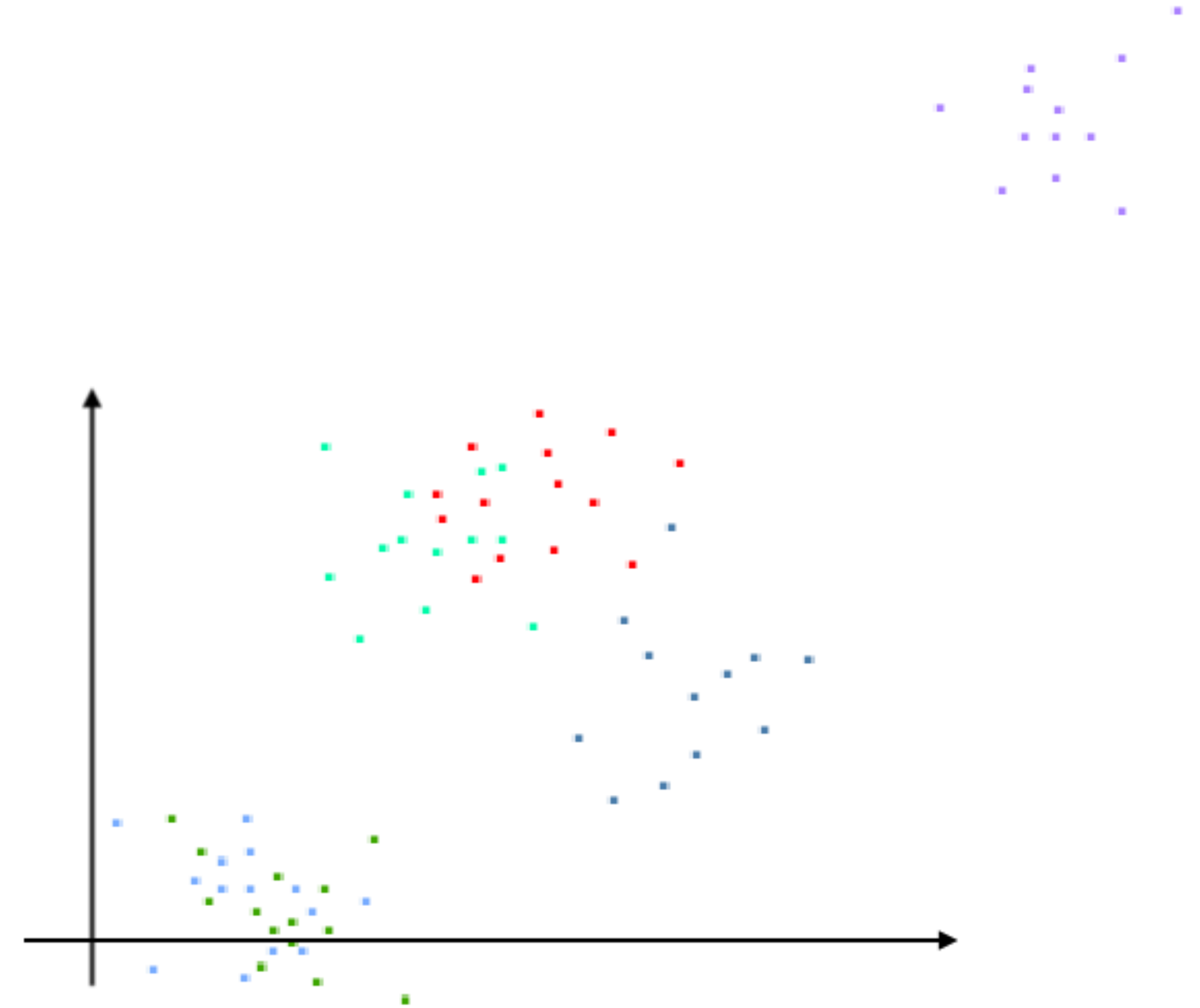
Centres

(Arrows point from 'Centres' to μ_{c_A} and μ_{c_B} in the formula)

$$L_{intra} = \frac{1}{C} \sum_{c=1}^C \frac{1}{E_c} \sum_{i=1}^{E_c} \left[\|\mu_c - e_i\| - \delta_2 \right]_+^2$$

Embedding

(Arrow points from 'Embedding' to e_i in the formula)



De Brabandere, B., Neven, D., Van Gool, L., & ESAT-PSI, K. U. *Semantic Instance Segmentation with a Discriminative Loss Function.*