Loss Function

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

To repulse different-instance embeddings away

To attract same-instance embeddings together

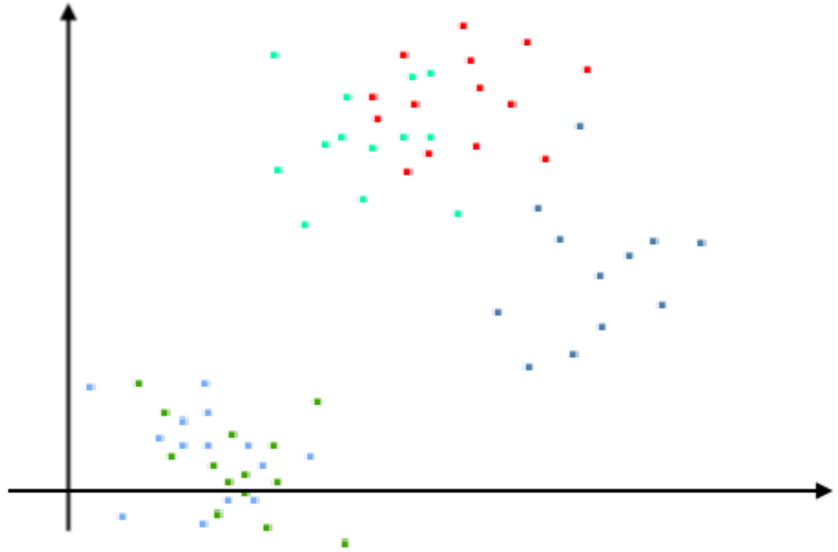
Loss Function: Cartesian

Centres

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

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

Embedding



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