$x_1^{(i)} \in \mathbb{R}^p$

$x_2^{(i)} \in \mathbb{R}^p$

X_i Tiles j ResNet Encoding

p features

$x_j^{(i)}$ $y_j^{(i)}$ $s_j^{(i)}$

k_C outputs   1 output

Bottleneck layer   Summary statistic

$\left(s_1^{(i)}, \ y_1^{(i)} \right) \in \mathbb{R}^{k_C+1}$

$\left(s_2^{(i)}, \ y_2^{(i)} \right) \in \mathbb{R}^{k_C+1}$

$\left(s_3^{(i)}, \ y_3^{(i)} \right) \in \mathbb{R}^{k_C+1}$

$\left(s_4^{(i)}, \ y_4^{(i)} \right) \in \mathbb{R}^{k_C+1}$

$\left(s_5^{(i)}, \ y_5^{(i)} \right) \in \mathbb{R}^{k_C+1}$

Ranking and concatenation

$Z_i \in \mathbb{R}^{2 \times (k_C+1) \times R}$

k_C

$2 \times R$

Flattening   Fully connected layers

Variable of interest

Neural Network