CAM-based Cumulative Relevance ρ_r

$$ho_r = \mathbb{E}_l \left\{ \mathbb{E}_n igg\{ rac{\mathbf{1}^ op (ilde{\mathbf{M}}_n^r \odot \mathbf{S}_{nl}^r) \mathbf{1}}{\mathbf{1}^ op \mathbf{S}_{nl}^r \mathbf{1}} : orall n \in N
ight\} orall l \in L
ight\}, \quad
ho_r \in [0,1] \qquad
ho_r igcap \
ho_r igcap \ \horall_r igcap \ \hora$$

Mask-based Cumulative Relevance ϱ_r

$$egin{aligned} arrho_{rl}^{'} &= \mathbb{E}_{n} igg\{ rac{\mathbf{1}^{ op} (ilde{\mathbf{M}}_{n}^{r} \odot \mathbf{S}_{nl}^{r}) \mathbf{1}}{\mathbf{1}^{ op} ilde{\mathbf{M}}_{n}^{r} \mathbf{1}} : orall n \in N igg\}, arrho_{rl} \in \mathbb{R}^{+} \ arrho_{r} &= \mathbb{E}_{l} \left\{ rac{arrho_{rl}^{'} ilde{\mathbf{M}}_{n}^{r} \mathbf{1}}{\max_{c \in \{0,1\}} arrho_{cl}^{'}} orall l \in L
ight\}, \quad arrho_{r}^{'} \in [0,1] \end{aligned}$$

$$CAM ext{-Dice }D^{'} \ D_{r}^{'} = \mathbb{E}_{l} \left\{ \mathbb{E}_{n} igg\{ 2rac{\mathbf{1}^{ op} ig(ilde{\mathbf{M}}_{n}^{r} \odot \mathbf{S}_{nl}^{r} ig) \mathbf{1}}{\mathbf{1}^{ op} ig(ilde{\mathbf{M}}_{n}^{r} \mathbf{1} + \mathbf{1}^{ op} \mathbf{S}_{nl}^{r} \mathbf{1}} : orall n \in N
ight\} : orall l \in L
ight\}, \quad D_{r}^{'} \in [0,1] \qquad D_{r}^{'} igf 1$$

$$D_r'$$