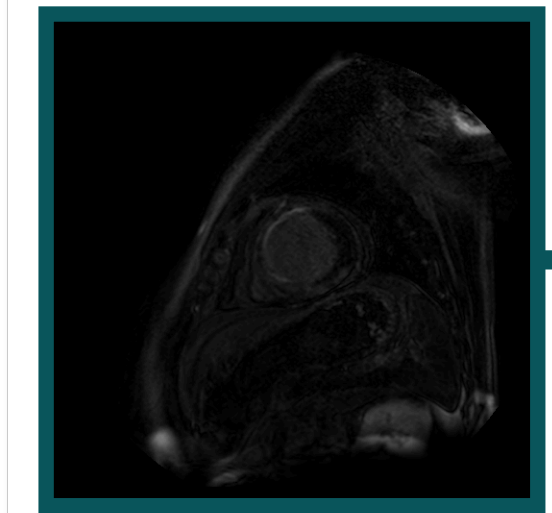


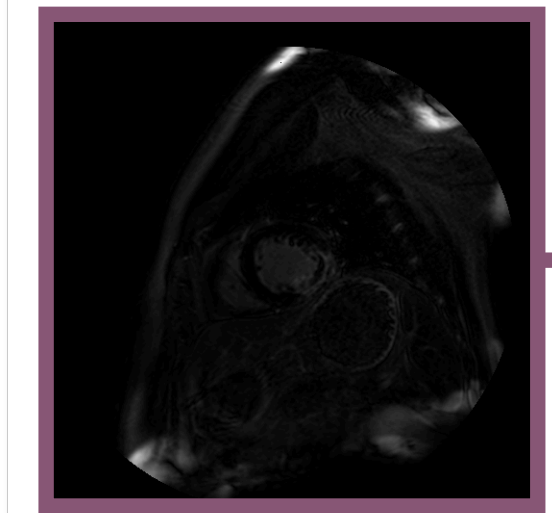
Style Content Decomposition-based Data Augmentation (StyCona)

Original image



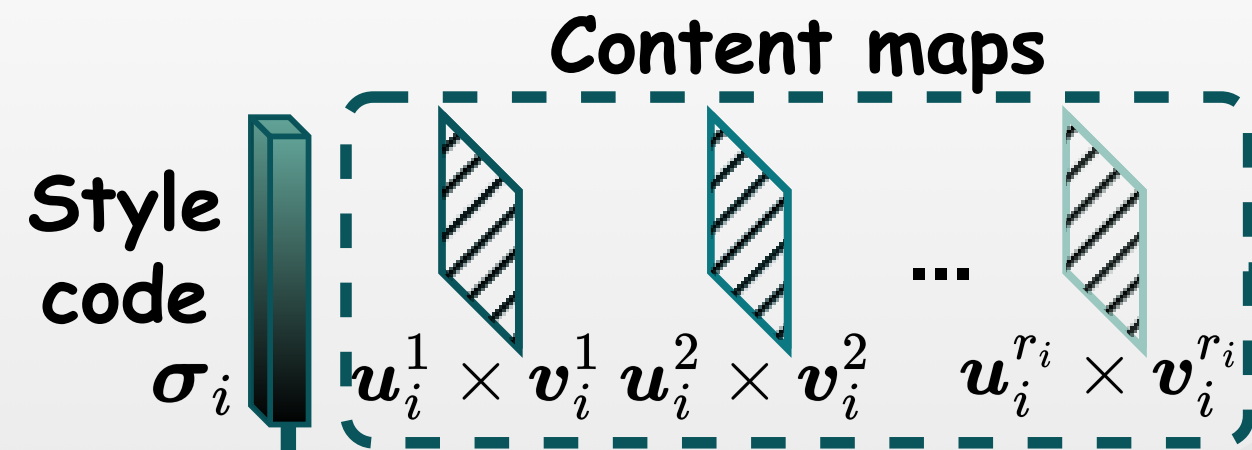
x_i

Auxiliary image



x_j

Style Content Decomposition



Style Augmentation (Global Image Properties)

Randomly select t components

Style code σ_i

Augmented style code $\tilde{\sigma}_i$



$1 - \alpha$

Style code σ_j

Randomly select t components

Content Augmentation (Local Anatomical Structures)

Content map

$=$

u_i^r

Matrix product

\times

v_i^r

β

β

\bar{u}_i^r

$=$

\bar{u}_i^r

\times

\bar{v}_i^r

Augmented content map

$1 - \beta$

$1 - \beta$

$=$

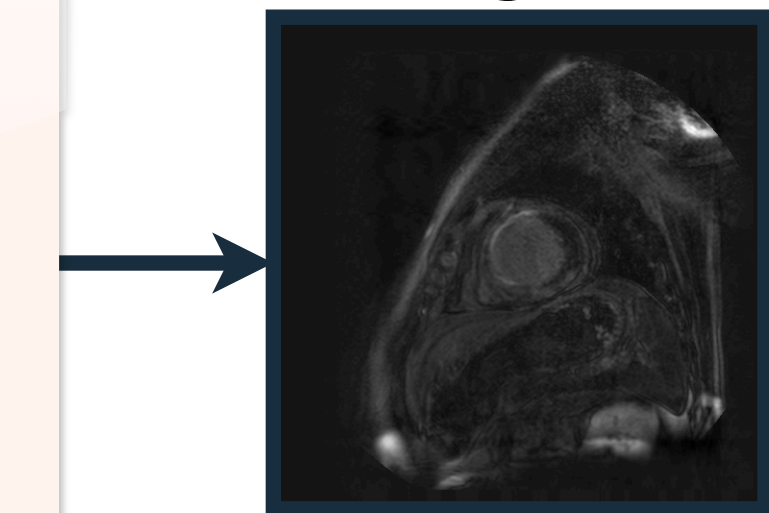
u_j^r

\times

v_j^r

Content map

StyCona-augmented image



$$\tilde{x}_i = \sum_r^R \tilde{\sigma}_i^r \bar{u}_i^r \bar{v}_i^{r\top}$$