

The shade of color represents the level of confidence.

NEG  
POS

Pseudo Label

MTD

Momentum  
Topic-Signal  
Distiller

State Embedding

① Pneumonia

② Cardiomegaly

③ Edema

⋮

④ Atelectasis

KL Loss

GTC

Cross Attention

Cross Attention

Graph Attention

Topic Embedding

Topic Graph

Pre-constructed  
Similarity Graph

① Pneumonia  
② Cardiomegaly  
③ Edema  
⋮  
④ Atelectasis

Lung Opacity

Edema

Pleural Effusion

Pneumonia

Cardiomegaly

Consolidation

lung volumes

Atelectasis

Visual  
Encoder

CNN  
Extractor



RG Loss

Report  
Decoder

Topic Cross-Attn

k

v

q

Visual Cross-Attn

k

v

q

Masked Self-Attn

Report  
Encoder

Target Report

*There is no focal consolidation, effusion, or pneumothorax. The cardiomeastinal silhouette is normal. Again seen are multiple clips projecting over the left breast and remote left-sided rib fractures. No free air below the right hemidiaphragm is seen.*