

Current Image



Radiology Report Generation

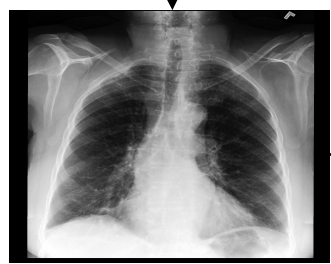
Prompt: Human: Generate a comprehensive and detailed diagnosis report for this chest X-ray image. Please refer to the patient's historical diagnostic information if available.

LLMs

Generated Report

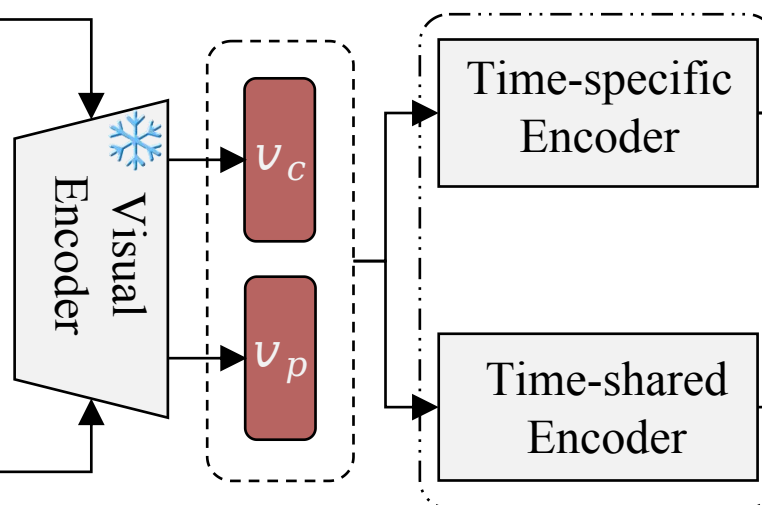
Findings:
Hyperexpanded lungs
with flattened
diaphragms are
unchanged

Time-Shared and -Specific Image Representation



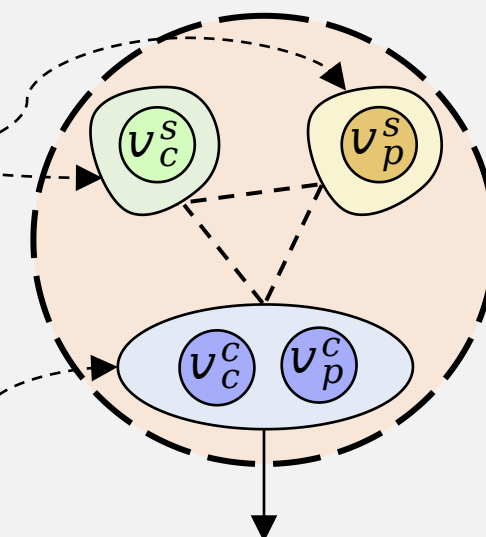
Current Image

Prior Image



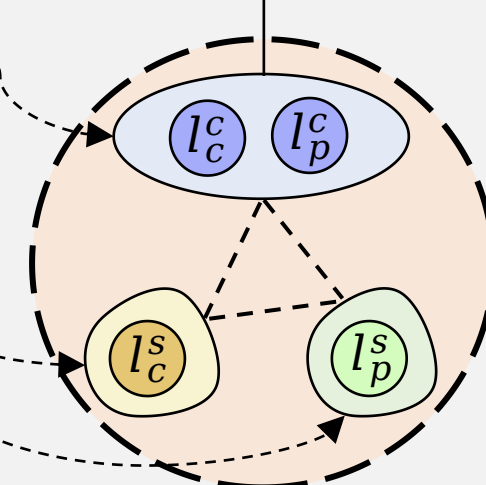
Shared Parameters

Tri-Consistency Constraints

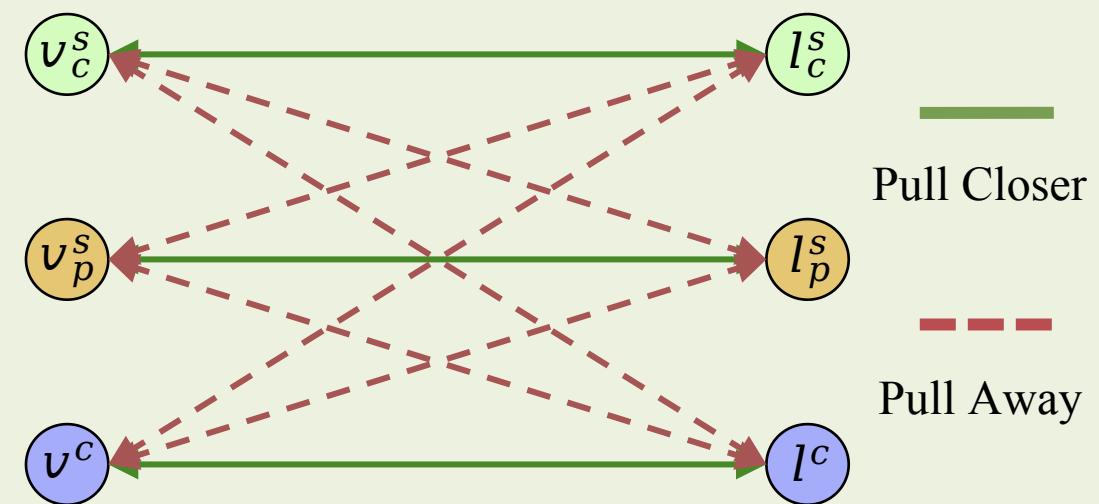


Similarity Constraint

$$\mathcal{L}_{sim}^{img} + \mathcal{L}_{sim}^{txt}$$

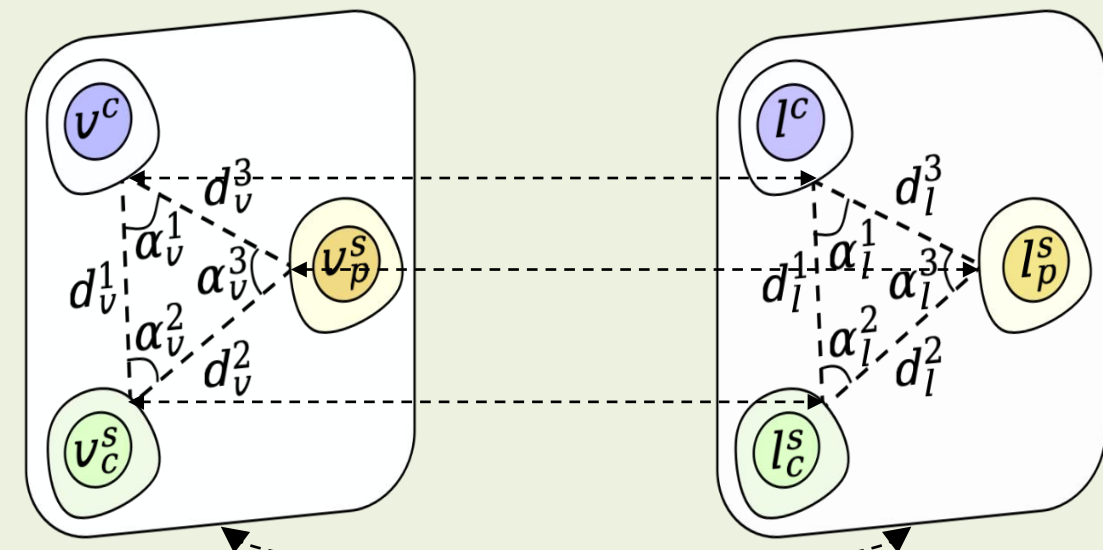


$$\mathcal{L}_{con} = \sum_i [sim(v_i, l_i) - sim(v_i, l_j)]$$



Multimodal Contrastive Constraints

Multimodal Structure Constraints



$$\mathcal{L}_{stru} = \zeta_{Distance} + \zeta_{Angle}$$

Generated Report

Prior Report

Findings: The
lungs are hyper-
expanded with
associated
flattening of

Time-Shared and -Specific Report Representation

