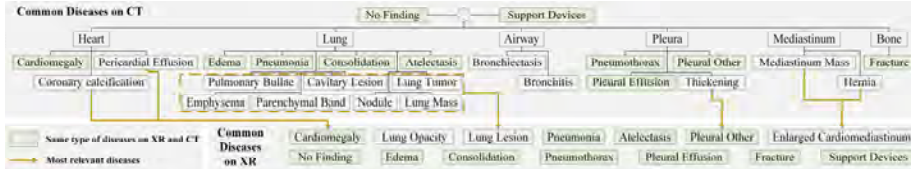# Continually Tuning a Large Language Model for Multi-domain Radiology Report Generation
Supplementary Material

Table 1. Hyper-parameters for the experiments.

Training epochs for D_{XE_1}	5
Training epochs for $D_{XE_2}, D_{XC}, D_{CTC}$	30
Batch size	8
Learning rate	0.0001
λ_1, λ_2	0.1, 1
τ	0.1
δ	$0.75 \cdot \left(1 - \langle h_{d(i)}^c, h_0^c \rangle\right)$
Instruction f^p for D_{XE_1} and D_{XE_2}	Radiologist: <Img><ImageHere></Img> Generate a comprehensive and detailed diagnosis report for this chest xray image. \nAssistant:
Instruction f^p for D_{XC}	放射科医生：<Img><ImageHere></Img>为该胸部X射线影像生成一份全面而详细的影像报告。\n助理： (Translation: Radiologist: <Img><ImageHere></Img> Generate a comprehensive and detailed diagnosis report for this chest xray image. \nAssistant:)
Instruction f^p for D_{CTC}	放射科医生：<Img><ImageHere></Img>为该胸部CT影像生成一份全面而详细的影像报告。\n助理： (Translation: Radiologist: <Img><ImageHere></Img> Generate a comprehensive and detailed diagnosis report for this chest CT image. \nAssistant:)
GPUs	2 × NVIDIA RTX A6000 with 48GB memory

Fig. 1. The disease graph for CT and their most relevant disease on XR for knowledge transferring.

Table 2. Details of training parameters on each dataset. ProgPrompt [27] and CMRG-LLM allocate a small number of parameters per-task after being trained on the initial dataset. "MLP" stands for multi-layer perceptron.

Methods	Training Parameters
On D_{XE_1}	
Per-task FT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
SeqFT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
Replay	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
EWC [15]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
DER [6]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
ProgPrompt [27]	$\theta, \mu, q, \sigma, \gamma, \beta$, an expanded prompt and an MLP layer for prompt reparameterization
CMRG-LLM	$f^t, \theta, \mu, q, \sigma, \gamma, \beta, P_h$
On D_{XE_2}	
Per-task FT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
SeqFT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
Replay	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
EWC [15]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
DER [6]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
ProgPrompt [27]	an expanded prompt and an MLP layer for prompt reparameterization
CMRG-LLM	$f^t, q, \gamma, \beta, P_h$
On D_{XC}	
Per-task FT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
SeqFT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
Replay	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
EWC [15]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
DER [6]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta$
ProgPrompt [27]	an expanded prompt and an MLP layer for prompt reparameterization
CMRG-LLM	$f^t, q, \sigma, \gamma, \beta, P_h$
On D_{CTC}	
Per-task FT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta, \alpha$
SeqFT	$f^t, \theta, \mu, q, \sigma, \gamma, \beta, \alpha$
Replay	$f^t, \theta, \mu, q, \sigma, \gamma, \beta, \alpha$
EWC [15]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta, \alpha$
DER [6]	$f^t, \theta, \mu, q, \sigma, \gamma, \beta, \alpha$
ProgPrompt [27]	α, an expanded prompt and an MLP layer for prompt reparameterization
CMRG-LLM	$f^t, q, \sigma, \gamma, \beta, P_h, \alpha$