## **Supplementary Material**

We selected the ResNet-34 for demonstrating our results and we have reported explanations from all four explainer in Figure 1 and 2.



Case: Pneumonia, Grad-shap

Case: Pneumonia, Integrated Gradients

Figure 1: For each plot, LDP explanation is on **Left** and Vanilla explanation is on **Right** 

Preprint



Case: TB, SmoothGrad

Case: TB, Saliency

Figure 2: For each plot, LDP explanation is on **Left** and Vanilla explanation is on **Right**