

## Supplementary Materials

**Table 1.** An overview of the datasets, including the training set, testing set, and the number of anomaly categories.

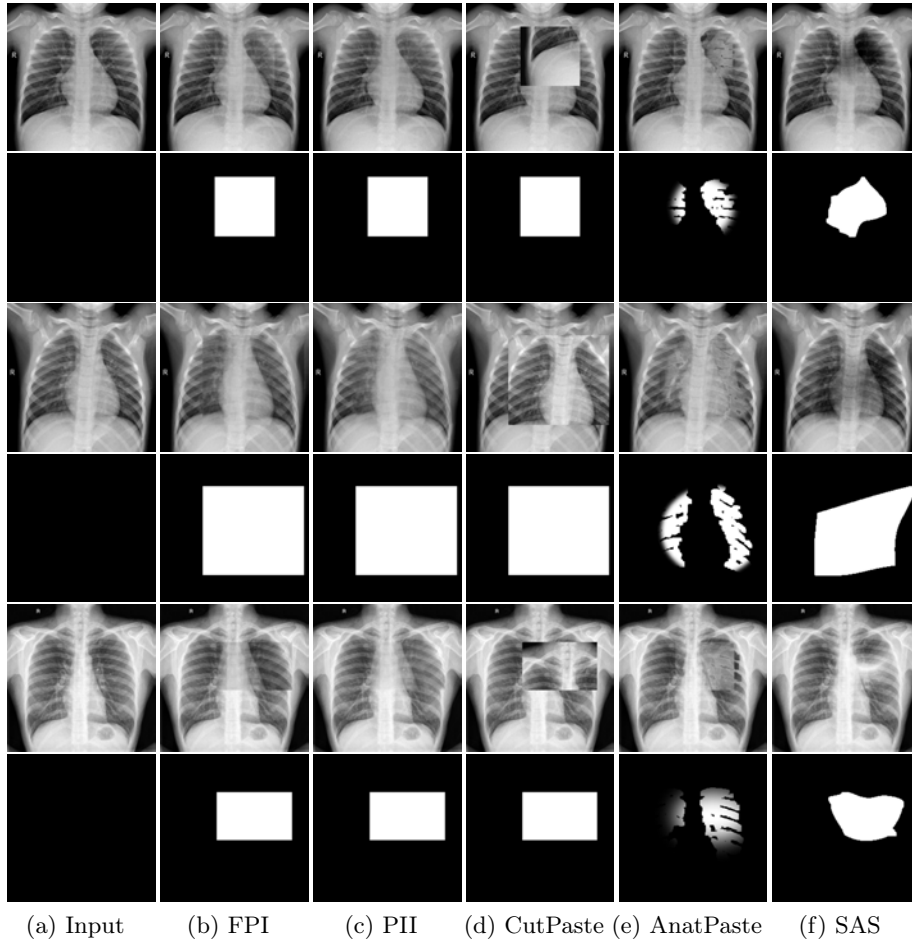
Dataset	Training set	Testing set	Anomaly category
ZhangLab	1249 normal images	234 normal + 390 abnormal images	2
CheXpert	4499 normal images	250 normal + 250 abnormal images	12
VinDr-CXR	4000 normal images	1000 normal + 1000 abnormal images	27

**Table 2.** Additional experimental results of CoOp and MaPLe applying FPI as anomaly synthesis method, with highlighted rows in gray.

<i>ZhangLab</i>	ACC (%) $\uparrow$	AUC (%) $\uparrow$	F1(%) $\uparrow$	AP(%) $\uparrow$
CheXzero	83.0	92.7	87.5	95.4
CoOp + FPI	83.6 $\pm$ 2.8	92.9 $\pm$ 1.0	87.9 $\pm$ 1.7	95.6 $\pm$ 0.6
CoOp + SAS	84.6 $\pm$ 1.7	94.6 $\pm$ 1.1	88.6 $\pm$ 1.0	96.7 $\pm$ 0.9
MaPLe + FPI	84.4 $\pm$ 1.8	93.5 $\pm$ 1.4	88.3 $\pm$ 1.2	96.0 $\pm$ 1.0
MaPLe + SAS	86.1 $\pm$ 1.0	95.1 $\pm$ 1.2	89.5 $\pm$ 0.5	97.1 $\pm$ 0.8
PPAD + FPI	87.0 $\pm$ 0.8	94.2 $\pm$ 0.7	90.0 $\pm$ 0.8	96.2 $\pm$ 0.7
PPAD + SAS	<b>89.4<math>\pm</math>0.6</b>	<b>96.7<math>\pm</math>0.4</b>	<b>91.8<math>\pm</math>0.5</b>	<b>98.0<math>\pm</math>0.3</b>

**Table 3.** Ablation study of the proposed PPAD with various numbers of training shots on the ZhangLab dataset. ACC serves as the evaluation metric.

Dataset	16 shots	32 shots	64 shots
<i>ZhangLab</i>	87.0 $\pm$ 1.8	88.6 $\pm$ 0.8	<b>89.4<math>\pm</math>0.6</b>



**Fig. 1.** Visual comparison of anomaly synthesis methods on ZhangLab dataset. For each group, the first row represents visualization performance, while the second row shows the masks of the corresponding anomalies. The proposed SAS is evidenced to generate authentic anomalies while preserving the structure of the lung.