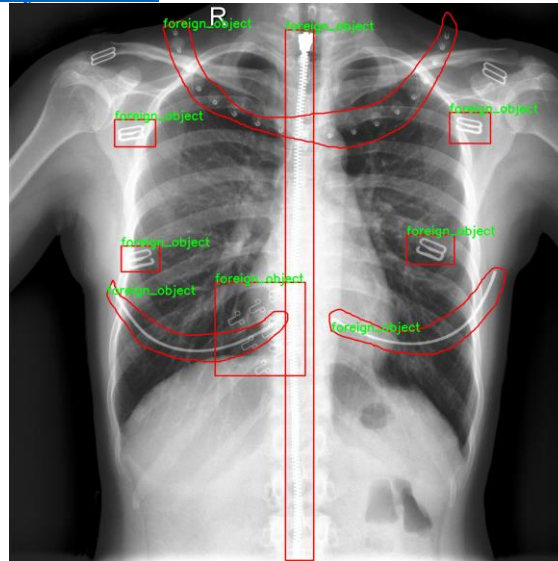**Medical Image Processing (Hieu Trung Huynh)**

Problem Set 4 (Detecting foreign objects in CXR images)

Detecting foreign objects is particularly challenging for deep learning (DL) based systems, as specific types of objects presented in the test set may be rarely or never seen in the training set, thus posing a few-shot/zero-shot learning problem. Details about problem and datasets are described on website: https://jfhealthcare.github.io/object-CXR/

Develop algorithm(s) for detecting foreign objects. The dataset consisting of 10000 images is splited into training, validation and test dataset:
- **training** 4000 chest X-rays with foreign objects presented; 4000 chest X-rays without foreign objects.
- **validation** 500 chest X-rays with foreign objects presented; 500 chest X-rays without foreign objects.
- **test** 500 chest X-rays with foreign objects presented; 500 chest X-rays without foreign objects.

The criteria for evaluation are the Area Under Curve (AUC) and Free-response Receiver Operating Characteristic (FROC).