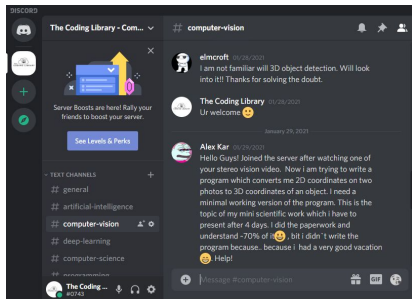


Neural Networks

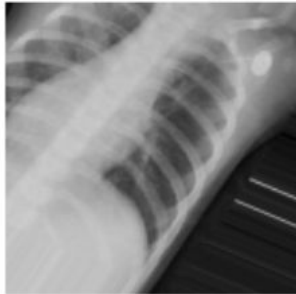
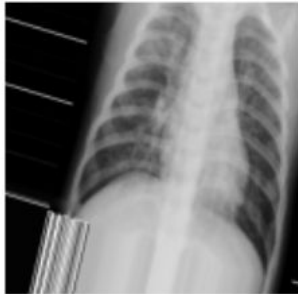
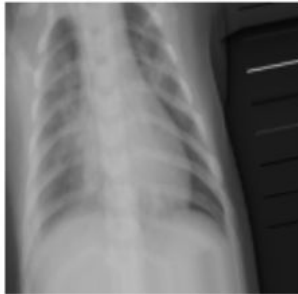
Data Augmentation



Discord Link in Description

What is Data Augmentation?

- Get more data with greater variance and differences
- Reduce overfitting



Data Augmentation in Keras

`ImageDataGenerator` class

```
tf.keras.preprocessing.image.ImageDataGenerator(  
    featurewise_center=False,  
    samplewise_center=False,  
    featurewise_std_normalization=False,  
    samplewise_std_normalization=False,  
    zca_whitening=False,  
    zca_epsilon=1e-06,  
    rotation_range=0,  
    width_shift_range=0.0,  
    height_shift_range=0.0,  
    brightness_range=None,  
    shear_range=0.0,  
    zoom_range=0.0,  
    channel_shift_range=0.0,  
    fill_mode="nearest",  
    cval=0.0,  
    horizontal_flip=False,  
    vertical_flip=False,  
    rescale=None,  
    preprocessing_function=None,  
    data_format=None,  
    validation_split=0.0,  
    dtype=None,  
)
```