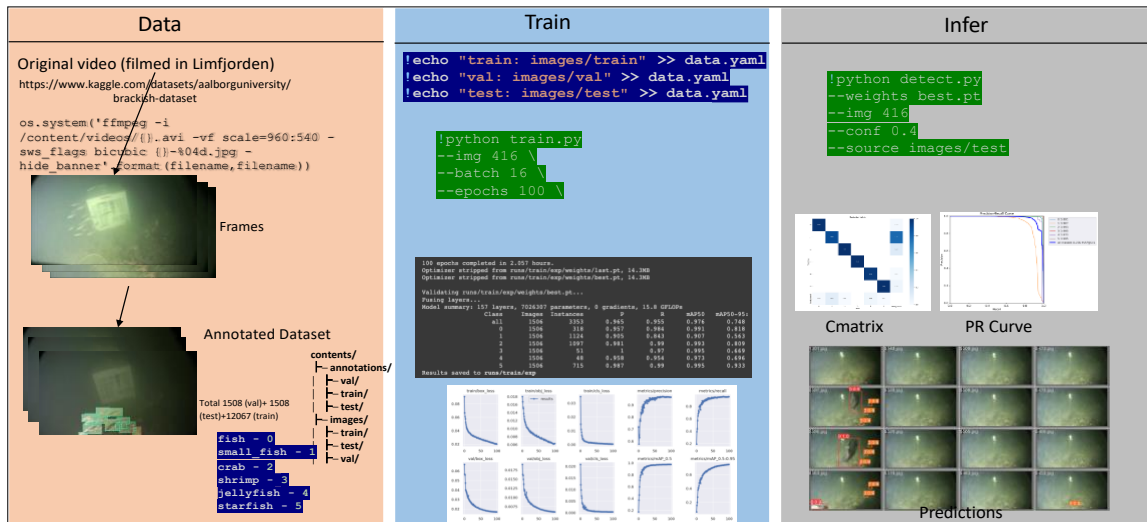# Implementation Details

A three-phase implementation (Data-Train-Infer) process is adapted for running all Object Detection Models which is shown in Figure below:

There are total of 6 experiment folders in the repository:

- **0_Dataset: Contains notebook file to download dataset and preprocess. To run this notebook, just click run all after importing it Google Colab.**

- **1_YOLO5_Experiment: Contains notebook file to download dataset preprocess, and then run YOLOv5 model. To run this notebook, just click run all after importing it Google Colab.**

- **2_YOLO8_Experiment: Contains notebook file to download dataset preprocess, and then run YOLOv8 model. To run this notebook, just click run all after importing it Google Colab. (The notebook requires high RAM runtime)**

- **3_EfficientDet_Experiment: Contains notebook file to download dataset preprocess, and then run EfficientDet model. To run this notebook, just click run all after importing it AWS Sagemaker, conda environment with specs mentioned in report Table 4.**

- **4_Detecron2:** Contains notebook file to download dataset preprocess, and then run Detectron2 model. To run this notebook, just click run all after importing it AWS Sagemaker, conda environment with specs mentioned in report Table 4.

- **5_GradCAM++:** Contains notebook files to perform GradCAM++ on YOLOv8 trained model and EfficientDet trained model. The folder also contains EffiicientDet and YOLOv8 model weights which can be imported to GradCAM++ notebooks. However the notebooks are designed such a manner that it can be run by importing in colab and click run all.