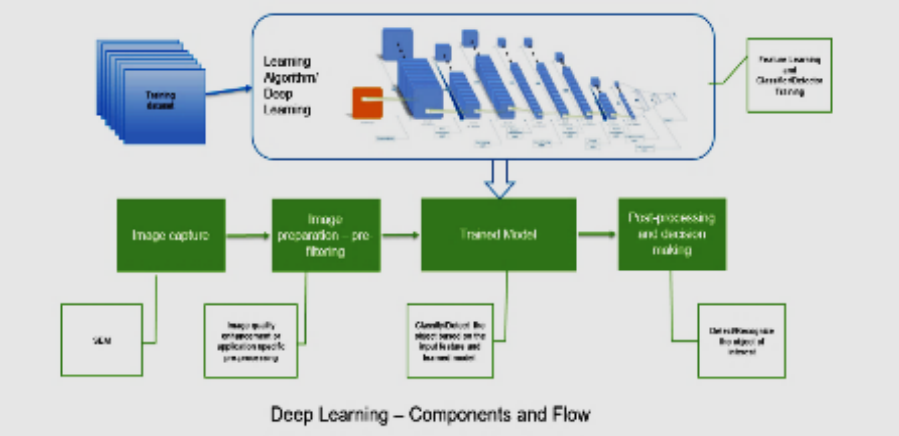
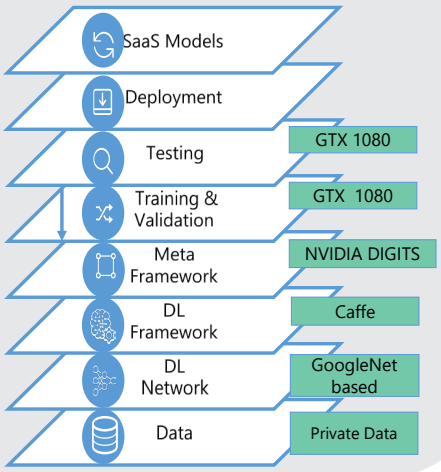
Deep Learning for Automatic Defect Detection And Classification



BENEFITS

- The accuracy achieved is 79.18% on validation data
- The work is currently ongoing



CUSTOMER CHALLENGE

- Automatically detect and classify the defects in SEM images
- Combining detection and classification can identify the defect as well as correctly localize the defects

SCOPE

- Detect the defects
- Classify the defects
- Bin the defects that do not fall into standard bincodes into a new category ‘Other’

SOLUTION

- The initial prototype implements a Deep Learning network based on CNN to detect and classify defects present in scanning electron microscope images
- Five defect classes were present in the images. A new class ‘other’ was introduced to handle unseen defects
- As the images available were not sufficient for developing the deep neural network, image augmentation techniques like flip, random crop and contrast enhancement were used

FEATURES

- Automatic defect detection and classification
- Identification of multiple types of defects from the image