**Intelligent Bar Counting**

**Technical Terms used -**

1. **Regularization Technique used** - Black box technique - Neural Network - Convolution Neural Network (CNN). Since we are using videos & images, we are choosing the above regularization technique.
2. **Algorithm used** - Image Processing Algorithm is being used - Batch Gradient Descent (for model training)
3. **Libraries used** –
4. cv2 (Open CV) - used for converting videos to images
5. time - used for capturing the video start time & end time
6. os - used for getting the input & output location of the system
7. ultralytics – to import YOLOV8 pre trained model
8. display – to display the output
9. Image – to get the images
10. Roboflow – for getting the annotated images as input
11. glob - retrieve files/pathname
12. streamlit – to use the streamlit api for deployment
13. numpy – for numerical calculations
14. pillow – image processing functionality
15. **Annotation Tool used** – Roboflow
16. **Hyperparameters used** –
    1. task - what kind of task to be performed (example: - detection)
    2. mode - phases of model building (train, test, validate, predict etc)
    3. model - model used (example: - YOLOV8x.pt)
    4. data - location of input data/dataset location
    5. epochs - number of batches the images are processed
    6. imgsz - imagesize (the size of the image during training)