Machine Learning Engineer Test for NRT

General Information

1. There are two tests outlined below. You can attempt either one. Test One is preferred between the two. If able to do both tests ! that is a major plus and will be duly considered.
2. It is recommended that python be used a programming language, however can use other language if the applicant feels more comfortable with the same.
    a. The code will be evaluated not only on the basis of being able to produce the output, but also its organization, and how well it is documented/commented.
3. It is estimated, that it should not take more than 2 days to develop the solution for either test, however even both can be attempted in the same.
4. Please share the output, along either of the following manners
    a. Upload onto Github page, from where it can be downloaded and run locally, OR
    b. Archive (zip) the entire project, and share through a google drive link.
    c. Upon download, when the code should be able to run and produce an output similar to the problem statement.

Test One - Human Detection in an aerial image (Preferred)

1. Test One Is a computer vision and machine learning test. Since a huge part of machine learning will be applied in the computer vision domain, this test is preferred to be attempted to evaluate the fit of the applicant with the organization.
2. Please download the image from this link: https://drive.google.com/open?id=1yCmYzjuJBoXOiX_eZMBnkvqzeFv14x-T
3. Please run a detector on this image, which should be able to detect the number of humans present in this image, draw a red bounding box around them, and mention the probability of that detection. Save that output to disk.
4. Calculate the net average IOU of the detections against the ground truth (note: the image is not pre-labelled for ground truth, you'd have to do that yourself).
5. Share the output (image with detections) and the calculated net avg IOU, as well as the project (when run locally, should produce the same output).

Test Two - Data gathering and visualization.

1. Since the role of a machine learning engineer involves gathering data,labelling,visualization and drawing inference from the same, this test could be attempted as an alternative, or in addition to Test one.
2. Please write a python script that scraps reviews from google play store for a given app, and makes two word clouds - one for words occurring in the most favourable review, and another one for and the lowest reviews. You could use the following steps
    a. The script visits the page of the given app based on the url, or the app store.
    b. It scrolls down automatically on the 'review' page loading more and more reviews

    c. It then scraps that ‘html’ data, to parse it in ‘rating’ and ‘review’. The same is saved as a csv file.
    d. Then, from the csv file, reviews rate (5) are loaded, and a word cloud made, that is plotted using a program like matplotlib, or other.
    e. Repeat the above step for reviews rated 1.
3. For example: you can download this document, where a similar process has been executed for reference: https://drive.google.com/open?id=1nwQAbCwzZ0nv7JizzJ6-25A8QuynkDts