# Challenge Brief

## AI Team

As final steps in the interview process, we created this coding challenge to assess your individual coding skills. The take-home coding challenge is expected to take a few hours to complete.

In the email, you will find a zip file containing an assorted collection of images, and a csv file with columns denoting the image file name and its corresponding caption. From these image-caption pairs, we would like for you to design a solution that computes a similarity metric between the images and texts

Specifically, we ask that you develop some code to perform the following:

1. Develop some code to compute the similarity metric for each image-text pair and save it in an additional column in the given csv file.

2. Briefly discuss the time and memory footprint of computing the similarity metric. How would you optimize your implementation If you were to do this on a scale of around ~100 million image-text pairs?

3. Briefly discuss how your method can be used to effectively curate data for text-to-image model training and provide an explanation

Please return your submission by responding to this email with an attached zip file containing only your code (python .py files) addressing 1 and a README.md file discussing your design considerations along with addressing 2 and 3.

This challenge is purposefully open-ended, and you are free to make any design decisions. You are welcome to use any python libraries or GitHub repos where you see fit.

Please document any design considerations as comments where appropriate and in the README file.

This project may require GPU utilisation. If you do not have access to a sufficient GPU in your development environment, we encourage the use of Google Colab which provides GPU access for free for 12 hours per account. However, please return your final code submission as one or more .py files.

If you choose to use Google Colab:

- You may need to set the Runtime type to GPU
- Files uploaded to Google Colab can be accessed from "/content/path/to/images"