

1 Data augmentation

a)Possible answer: It is better to augment the data after selecting the mini-batch. If we did it at the beginning (with the whole dataset at once), it would be less efficient and more costly. On the other hand, augmentation after mini-batch selection allows us to achieve better results at less cost and to obtain different modified images each time.

(Optional question answer: cropping, color space transformation, noise injection...)

b)Possible answer: We get the best results thanks to the so-called ensemble technique. The reason why it works is that, by averaging our predictions, on randomly modified images, we are also averaging the errors. The error can be big in a single vector, leading to a wrong answer, but when averaged, only the correct answer stand out. At the end we will average the predictions of each corresponding image and take that as our final guess.