

# 1 Transfer Learning

## 1.1 Comparing Models

### 1.1.a Inference Speed per Image against Accuracy and Number of Parameters

With a Pearson correlation coefficient of 0.78 there seems to be a positive correlation between the top-1 accuracy and the inference speed, so accurate models tend to take longer. ViT-B/32 model performs best overall with a higher accuracy for its inference speed than the trend suggests. For inference speed against number of trainable parameters, we see no correlation. The number of trainable parameters should only play a role when the model is being trained, not during inferencing.

### 1.1.b Inference Speed per Image with and without `torch.no_grad()`

With `torch.no_grad()` the inference speed should be faster because gradients are not computed and stored for the backward pass. This is confirmed by the results, the inference speed is slightly faster with `torch.no_grad()` across the models.