

# Supplementary Material - The Phenomenon of Correlated Representations in Contrastive Learning

**Abstract**—The figures included in the supplementary material are repetitions of the experiments shown in the main body of contribution, repeated with the alternative datasets. Without adding any further insight, we decided to not include them in the main paper, as to not unnecessarily bloat the main contribution. In addition, we provide detailed results for some of the figures in the form of tables. Our code is available to the reviewers at [anonymous.4open.science/r/cf-6378](https://anonymous.4open.science/r/cf-6378)

I. FIG. 6 VARIATIONS

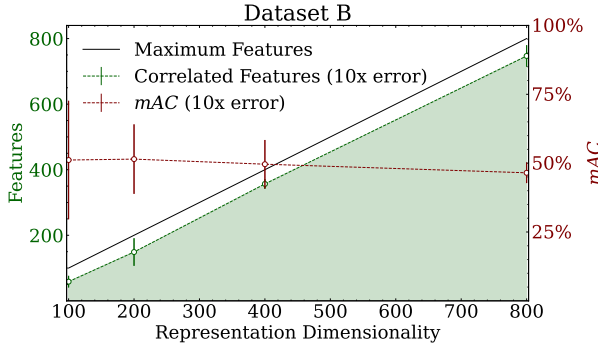


Fig. 1: Like Fig. 6 from the main paper, but on dataset B.

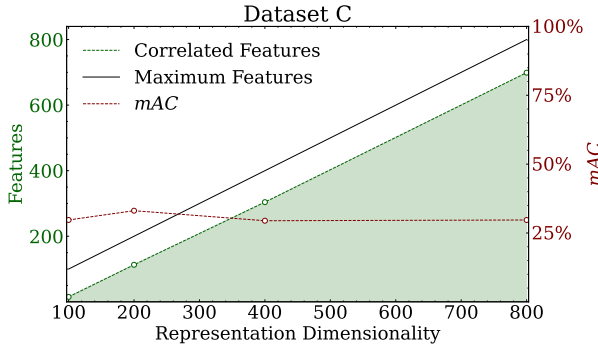


Fig. 2: Like Fig. 6 from the main paper, but on dataset C.

II. FIG. 9 VARIATIONS

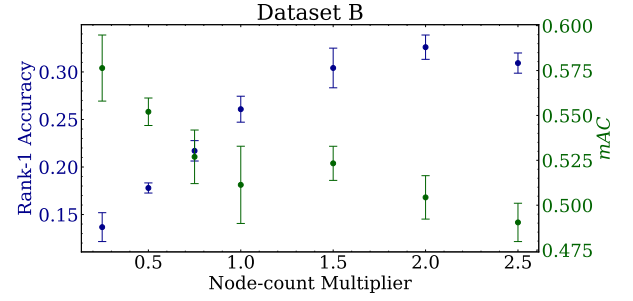


Fig. 3: Like Fig. 9 from the main paper, but on dataset B.

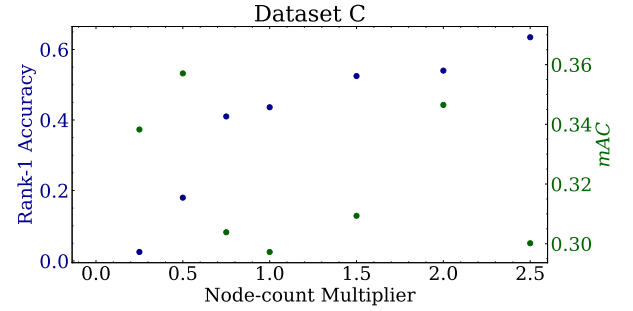


Fig. 4: Like Fig. 9 from the main paper, but on dataset C.

### III. VARIATIONS OF FIG. 4 AND FIG. 5

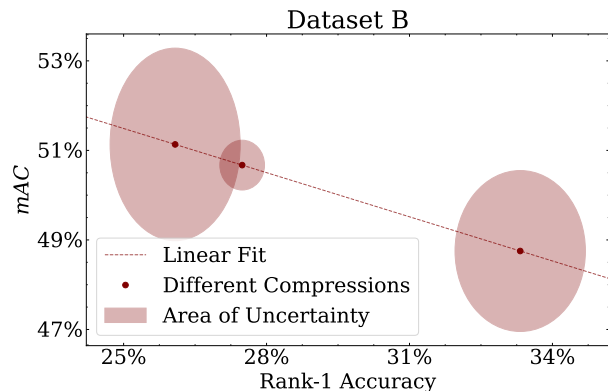


Fig. 5: Like Fig. 4 from the main paper, but on dataset B. Because of the different input image dimensionality, we are limited in how far we can compress the images. This results in a 100% correlation and is the reason we don't include this image in the main paper.

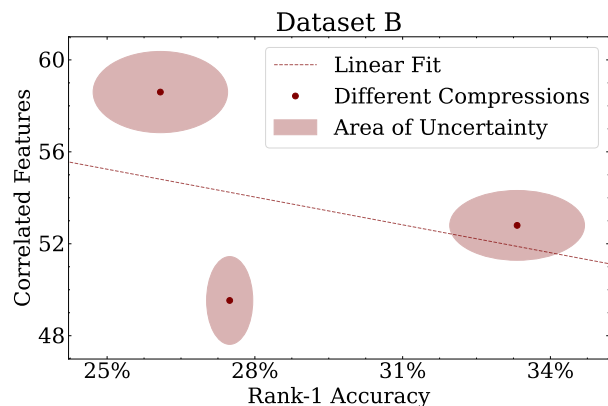


Fig. 6: Like Fig. 5 from the main paper, but on Dataset B. Because of the different input image dimensionality, we are limited in how far we can compress the images. We also see a less significant correlation compared to the original paper of -33%.

These experiments were not conducted with dataset C, as the original resolution is too low for the experiments to be sensible.

### IV. ADDITIONAL TABLES

| Compression | Rank-1 Accuracy | mAC  | Correlated Features |
|-------------|-----------------|------|---------------------|
| 1           | 0.59            | 0.34 | 63.33               |
| 2           | 0.77            | 0.29 | 51.39               |
| 3           | 0.81            | 0.27 | 40.56               |
| 4           | 0.78            | 0.28 | 38.5                |
| 5           | 0.69            | 0.31 | 40                  |
| 6           | 0.59            | 0.34 | 51                  |
| 7           | 0.59            | 0.35 | 60.83               |

TABLE I: Tabular form of Fig. 4 (mAC) and Fig. 5 (Correlated Features) in the main paper.

| Compression | Rank-1 Accuracy | mAC  | Correlated Features |
|-------------|-----------------|------|---------------------|
| 1           | 0.26            | 0.51 | 58.6                |
| 2           | 0.33            | 0.49 | 52.8                |
| 3           | 0.27            | 0.51 | 49.53               |

TABLE II: Tabular form of Fig. 4 (mAC) and Fig. 5 (Correlated Features) in the main paper, applied to dataset B.