

Deepfake Analysis Report

(Backbone: b5)

1. Performance Summary

| Model | Size (MB) | Reduction | AUC | Diff |
|----------|-----------|-----------|-------------------|---------|
| baseline | 108.79 | -0.0% | 0.9549 (Baseline) | +0.0000 |
| q16 | 54.60 | -49.8% | 0.9548 (Stable) | -0.0001 |
| q16-p50 | 54.60 | -49.8% | 0.9334 (Degraded) | -0.0215 |
| q32-p50 | 108.99 | --0.2% | 0.9332 (Degraded) | -0.0216 |
| q8 | 27.80 | -74.4% | 0.7588 (Degraded) | -0.1960 |
| q8-p50 | 27.80 | -74.4% | 0.7119 (Degraded) | -0.2429 |

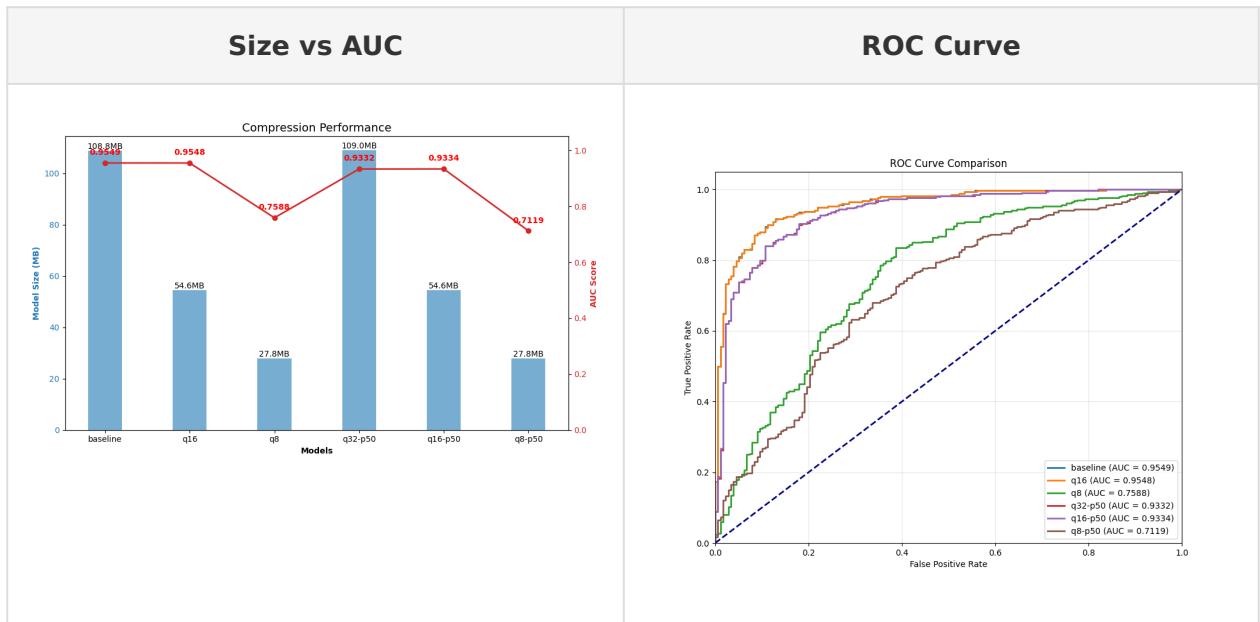
2. Key Insights

- Highest AUC: **baseline** at 0.9549.
- Best compression within 1% AUC of baseline: **q16** (54.6 MB, 49.8% smaller).
- Largest AUC drop: **q8-p50** (-0.2429).

3. Classification Quality

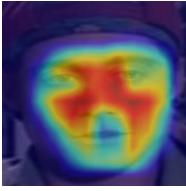
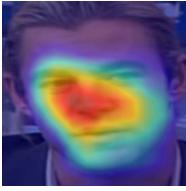
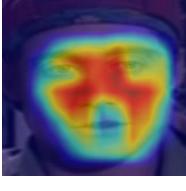
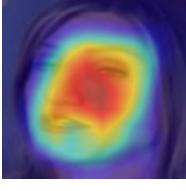
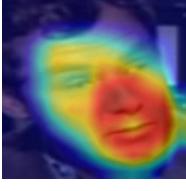
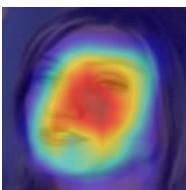
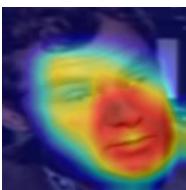
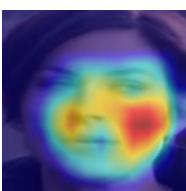
| Model | Samples | TP | TN | FP | FN | Precision | Recall | F1 | Accuracy |
|-----------------|---------|-----|-----|-----|----|-----------|--------|-------|----------|
| baseline | 518 | 292 | 163 | 15 | 48 | 0.951 | 0.859 | 0.903 | 0.878 |
| q16 | 518 | 291 | 163 | 15 | 49 | 0.951 | 0.856 | 0.901 | 0.876 |
| q16-p50 | 518 | 339 | 50 | 128 | 1 | 0.726 | 0.997 | 0.840 | 0.751 |
| q32-p50 | 518 | 339 | 49 | 129 | 1 | 0.724 | 0.997 | 0.839 | 0.749 |
| q8 | 518 | 339 | 2 | 176 | 1 | 0.658 | 0.997 | 0.793 | 0.658 |
| q8-p50 | 518 | 340 | 0 | 178 | 0 | 0.656 | 1.000 | 0.793 | 0.656 |

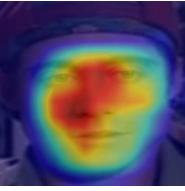
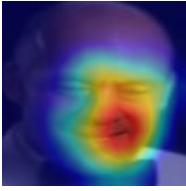
4. Visualizations



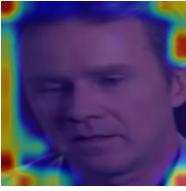
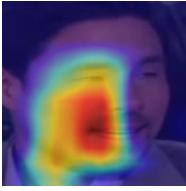
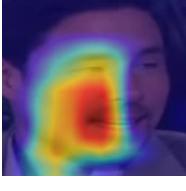
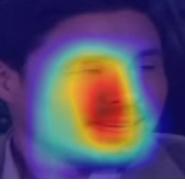
5. Visual Analysis

Resolved Fakes (True Positives)

| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|-----------------|---|---|---|--|---|
| Baseline |  |  |  |  |  |
| | 0.9999 id37_id3_0.. | 0.9999 id46_id41.._ | 0.9999 id43_id40.._ | 0.9999 id1_id2_00.. | 0.9998 id17_id16.._ |
| q16 |  |  |  |  |  |
| | 0.9999 id37_id3_0.. | 0.9999 id46_id41.._ | 0.9999 id43_id40.._ | 0.9999 id1_id2_00.. | 0.9998 id17_id16.._ |
| q16-p50 |  |  |  |  |  |
| | 0.9986 id35_id31.._ | 0.9982 id37_id28.._ | 0.9981 id21_id20.._ | 0.9980 id39_id44.._ | 0.9980 id28_id6_0.. |
| q32-p50 |  |  |  |  |  |
| | 0.9986 id35_id31.._ | 0.9982 id37_id28.._ | 0.9981 id21_id20.._ | 0.9981 id39_id44.._ | 0.9980 id28_id6_0.. |
| q8 |  |  |  |  |  |
| | 1.0000 id46_id41.._ | 1.0000 id2_id0_00.. | 1.0000 id1_id2_00.. | 0.9999 id1_id3_00.. | 0.9999 id57_id53.._ |

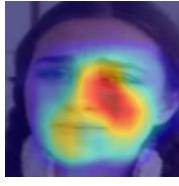
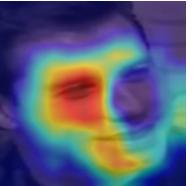
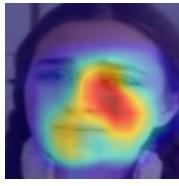
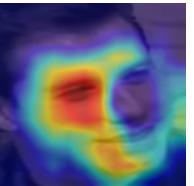
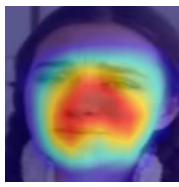
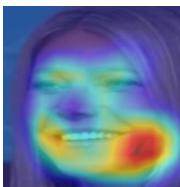
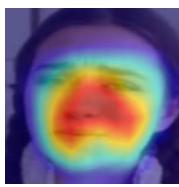
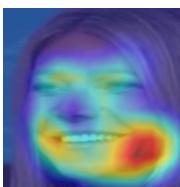
| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|---------------|---|---|---|--|---|
| q8-p50 |  |  |  |  |  |
| | 0.9998 id1_id2_00.. | 0.9995 id17_id2_0.. | 0.9994 id2_id26_0.. | 0.9993 id24_id20.._ | 0.9993 id2_id0_00.. |

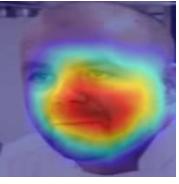
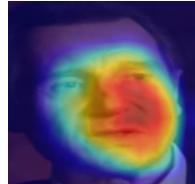
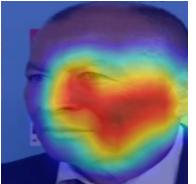
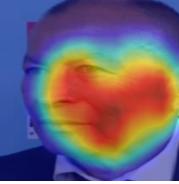
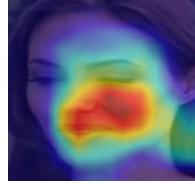
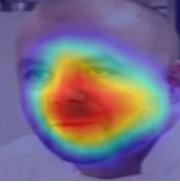
Missed Fakes (False Negatives)

| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|-----------------|---|---|---|--|---|
| Baseline |  |  |  |  |  |
| | 0.0304 id29_id32.._ | 0.1034 id30_id6_0.. | 0.1215 id33_id32.._ | 0.1218 id30_id23.._ | 0.1294 id9_id3_00.. |
| q16 |  |  |  |  |  |
| | 0.0301 id29_id32.._ | 0.1025 id30_id6_0.. | 0.1206 id33_id32.._ | 0.1208 id30_id23.._ | 0.1291 id9_id3_00.. |
| q16-p50 |  | N/A | N/A | N/A | N/A |
| | 0.3961 id9_id3_00.. | | | | |
| q32-p50 |  | N/A | N/A | N/A | N/A |
| | 0.3973 id9_id3_00.. | | | | |
| q8 |  | N/A | N/A | N/A | N/A |
| | 0.3872 id10_id11.._ | | | | |

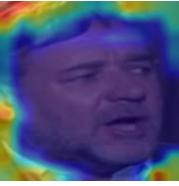
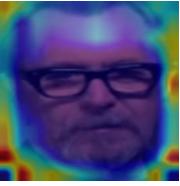
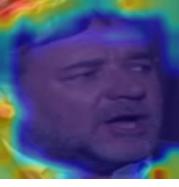
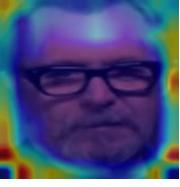
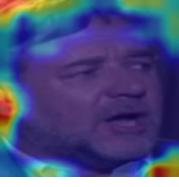
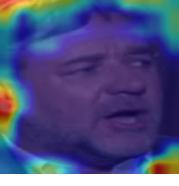
| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|---------------|---------------|---------------|---------------|---------------|---------------|
| q8-p50 | N/A | N/A | N/A | N/A | N/A |

False Positives (Real labeled Fake)

| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|-----------------|---|---|---|--|---|
| Baseline |  |  |  |  |  |
| | 0.9808 00047.mp4 | 0.8435 id51_0001... | 0.8011 00170.mp4 | 0.7185 id31_0003... | 0.6559 id21_0009... |
| q16 |  |  |  |  |  |
| | 0.9809 00047.mp4 | 0.8418 id51_0001... | 0.8003 00170.mp4 | 0.7177 id31_0003... | 0.6526 id21_0009... |
| q16-p50 |  |  |  |  |  |
| | 0.9966 00047.mp4 | 0.9955 id51_0001... | 0.9936 00082.mp4 | 0.9876 00256.mp4 | 0.9728 00264.mp4 |
| q32-p50 |  |  |  |  |  |
| | 0.9966 00047.mp4 | 0.9955 id51_0001... | 0.9937 00082.mp4 | 0.9878 00256.mp4 | 0.9734 00264.mp4 |

| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|---------------|---|---|---|--|---|
| q8 |  |  |  |  |  |
| | 0.9999 00119.mp4 | 0.9999 00236.mp4 | 0.9999 id37_0004... | 0.9998 00252.mp4 | 0.9998 00264.mp4 |
| q8-p50 |  |  |  |  |  |
| | 0.9993 00264.mp4 | 0.9989 00252.mp4 | 0.9987 id13_0011... | 0.9984 00256.mp4 | 0.9984 00119.mp4 |

Confirmed Reals (True Negatives)

| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|-----------------|---|---|---|---|---|
| Baseline |  |  |  |  |  |
| | 0.0020 id32_0008... | 0.0026 id27_0009... | 0.0027 id4_0004.mp4 | 0.0033 id36_0008... | 0.0035 id44_0003... |
| q16 |  |  |  |  |  |
| | 0.0020 id32_0008... | 0.0026 id27_0009... | 0.0027 id4_0004.mp4 | 0.0033 id36_0008... | 0.0035 id44_0003... |
| q16-p50 |  |  |  |  |  |
| | 0.0321 id32_0008... | 0.0702 id36_0008... | 0.0847 id27_0009... | 0.0956 id35_0003... | 0.1100 id36_0000... |
| q32-p50 |  |  |  |  |  |
| | 0.0323 id32_0008... | 0.0704 id36_0008... | 0.0851 id27_0009... | 0.0965 id35_0003... | 0.1107 id36_0000... |
| q8 |  |  | N/A | N/A | N/A |

| Model | Rank 1 | Rank 2 | Rank 3 | Rank 4 | Rank 5 |
|---------------|---------------------|------------------------|--------|--------|--------|
| | 0.3014 00207.mp4 | 0.3667 id35_0003... | | | |
| q8-p50 | N/A | N/A | N/A | N/A | N/A |