Error Analysis: resnet50 on FER2013

Per-Class Error Rates

Mean: 29.8%

Class	Error Rate
Angry	32.4%
Disgust	32.4%
Fear	44.4%
Happy	10.7%
Sad	40.8%
Surprise	15.6%
Neutral	31.9%
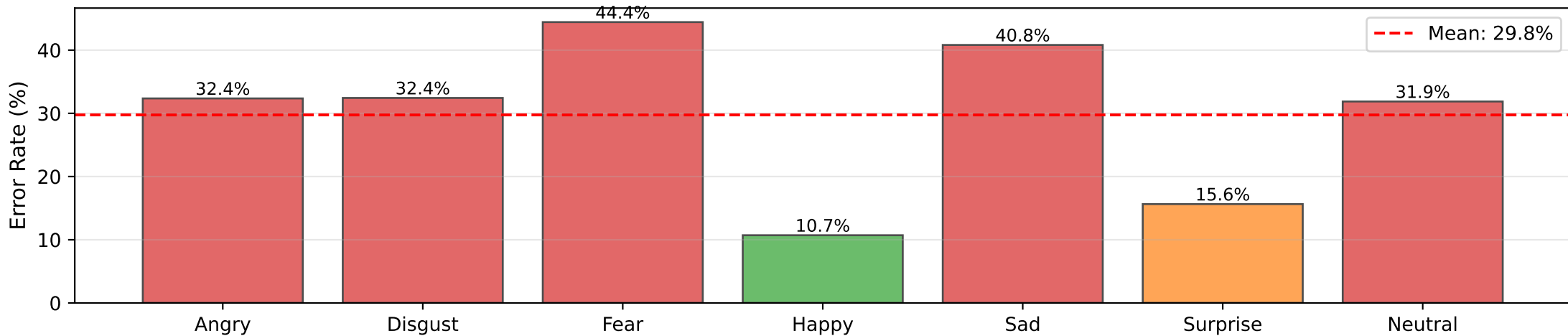
Top 10 Most Confused Class Pairs
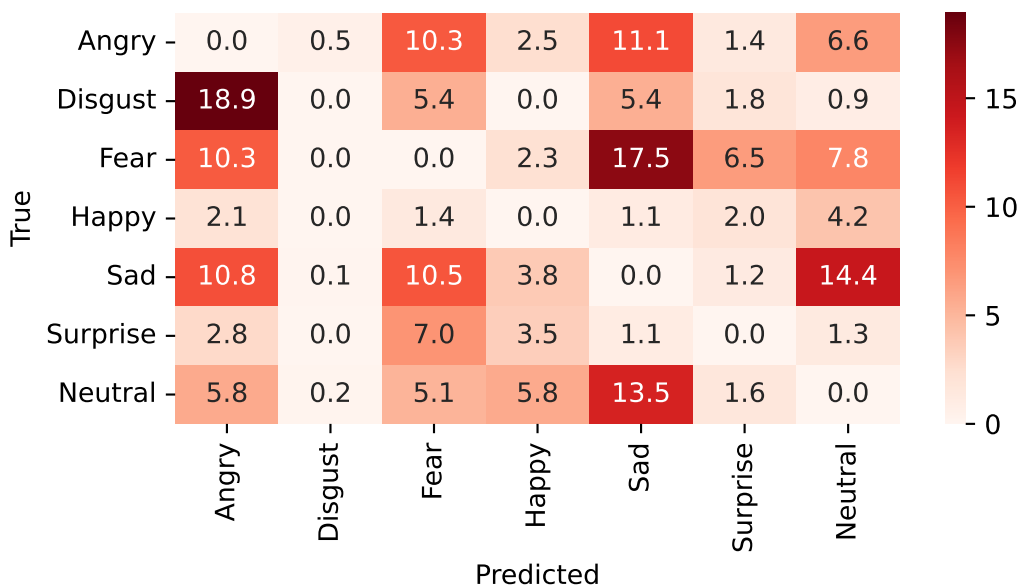
Confusion Rate (% of True Class)

Pair	Rate
Disgust→Angry	18.9%
Fear→Sad	17.5%
Sad→Neutral	14.4%
Neutral→Sad	13.5%
Angry→Sad	11.1%
Sad→Angry	10.8%
Sad→Fear	10.5%
Angry→Fear	10.3%
Fear→Angry	10.3%
Fear→Neutral	7.8%
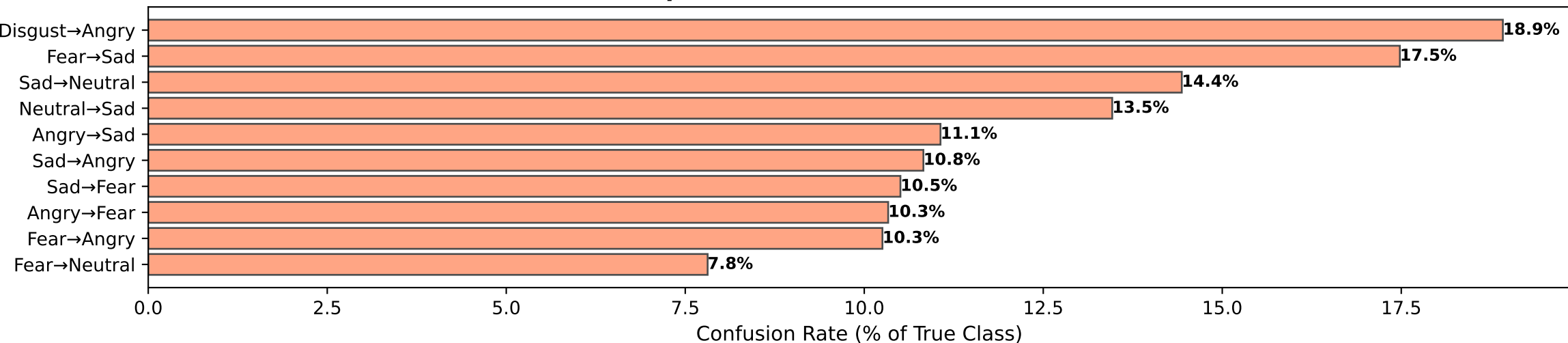
Error Distribution Matrix

True \ Predicted	Angry	Disgust	Fear	Happy	Sad	Surprise	Neutral
Angry	0.0	0.5	10.3	2.5	11.1	1.4	6.6
Disgust	18.9	0.0	5.4	0.0	5.4	1.8	0.9
Fear	10.3	0.0	0.0	2.3	17.5	6.5	7.8
Happy	2.1	0.0	1.4	0.0	1.1	2.0	4.2
Sad	10.8	0.1	10.5	3.8	0.0	1.2	14.4
Surprise	2.8	0.0	7.0	3.5	1.1	0.0	1.3
Neutral	5.8	0.2	5.1	5.8	13.5	1.6	0.0

```
ERROR ANALYSIS SUMMARY
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Overall Accuracy: 71.82%
Average Error Rate: 29.75%

Best Performing Class:
  • Happy: 89.29% accuracy

Worst Performing Class:
  • Fear: 55.57% accuracy

Most Critical Confusions:
  1. Disgust → Angry: 18.9%
  2. Fear → Sad: 17.5%
  3. Sad → Neutral: 14.4%
```