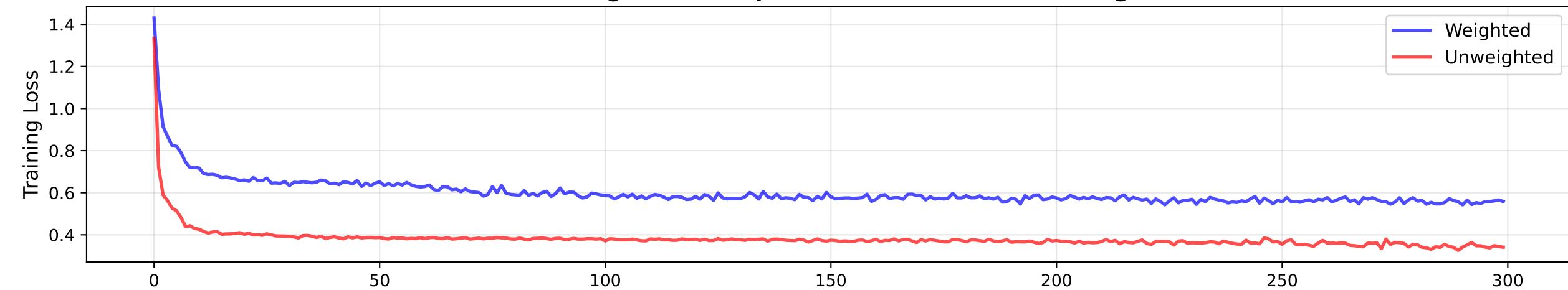
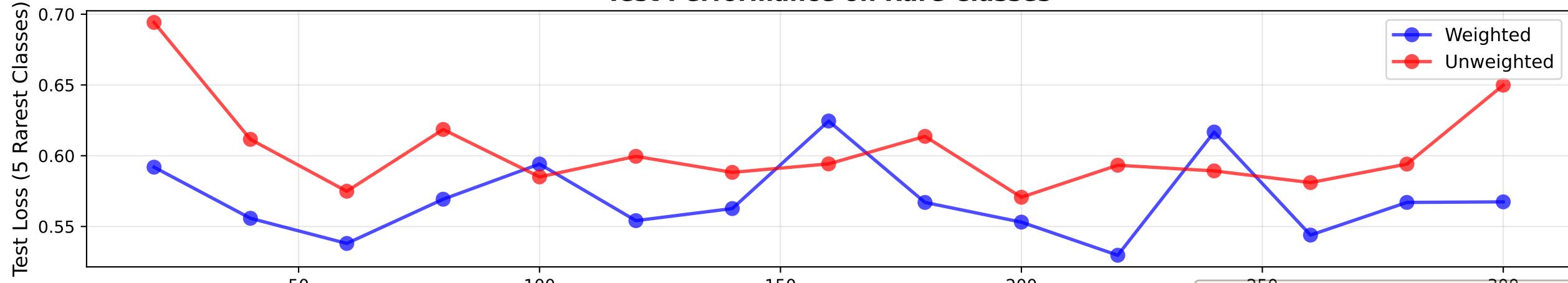


# Weighted vs Unweighted Incomplete U-Statistics (Batched)

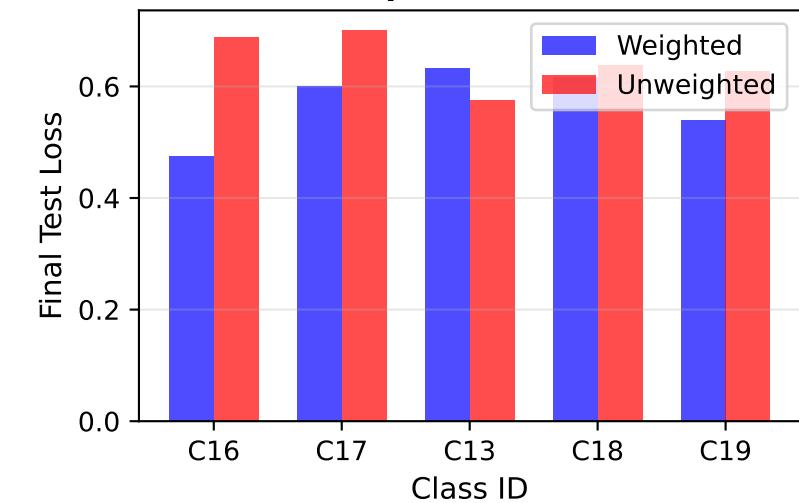
## Training Loss Comparison (Batched Processing)



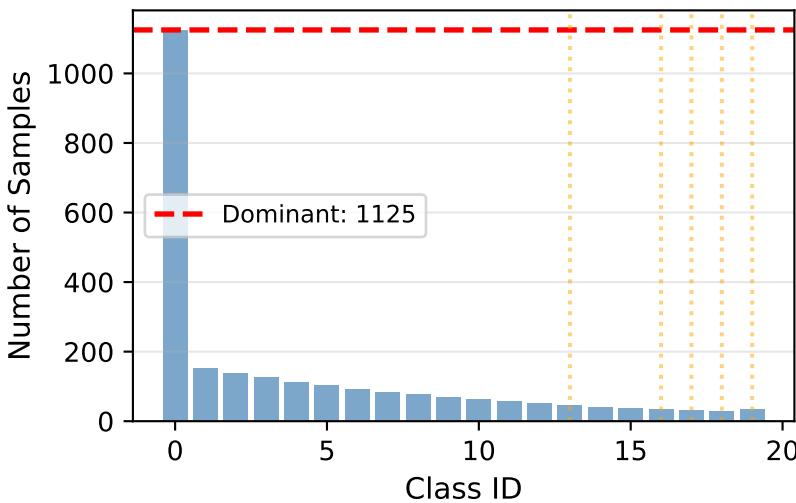
## Test Performance on Rare Classes



## Loss per Rare Class



## Class Distribution (Imbalanced)



## SUMMARY STATISTICS

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Training:

- Weighted final loss: 0.5583
- Unweighted final loss: 0.3412

Test (5 Rarest Classes):

- Weighted avg: 0.5728
- Unweighted avg: 0.6461
- Improvement: +11.34%

Dataset:

- Dominant class size: 1125
- Rarest class size: 28
- Imbalance ratio: 40.2x

Winner: WEIGHTED ✓