

Catastrophic Forgetting (Catastrophic Forgetting)

Causes of Forgetting

- Weight overwriting: Previous weights changed during new task learning
- Distribution imbalance: New data significantly different from previous data
- Learning rate setting: Rapid changes due to excessive learning rate
- Batch size: Unstable updates with small batches

Performance Degradation Patterns

- Rapid drop in previous task accuracy (10-50%)
- Loss of specific class recognition ability
- Decreased ability to diagnose rare diseases
- Overall generalization performance degradation

Clinical Impact

- Increased risk of misdiagnosis of existing diseases
- Patient safety issues
- Decreased clinician trust

- Difficulty maintaining regulatory approval