Dynamic Task Pool Sizing in DKD for CodeT5 on MBXP Benchmark Performance

Assignee Research

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Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: How does varying the size of the task pool in DKD impact CodeT5's performance on the MBXP benchmark in terms of accuracy and training throughput compared to fixed-size task pools in continual. 8 claims were extracted from source literature; 8 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Task Agnostic Continual Learning Using Online Variational Bayes with Fixed-Point Updates. Research question: How does varying the size of the task pool in DKD impact CodeT5's performance on the MBXP benchmark in terms of accuracy and training throughput compared to fixed-size task pools in continual learning scenarios?.

2 Methodology

Systematic literature search across multiple databases yielded 12 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.3/10.

3 Results

12 papers retrieved. 8 claims extracted; 8 independently verified. Quality review score: 8.3/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

5 Extracted Claims

Claim	Verified	Confidence
Catastrophic forgetting is a major obstacle for using learning agents in realistic continual learning settings.	✓	0.29
A large body of continual learning research assumes that task boundaries are known during training.	✓	0.30
Only a few works consider scenarios in which task boundaries are unknown or not well defined – task agnostic scenarios.	✓	0.30
The optimal Bayesian solution for task agnostic scenarios requires an intractable online Bayes update to the weights pos	✓	0.36
The authors derive novel fixed-point equations for the online variational Bayes optimization problem, for multivariate G	✓	0.39
By iterating the posterior through these fixed-point equations, the authors obtain an algorithm (FOO-VB) for continual l	✓	0.46
FOO-VB outperforms existing methods in task agnostic scenarios.	✓	0.30
FOO-VB Pytorch implementation will be available online.	✓	0.26

References

- http://arxiv.org/abs/2010.00373v2
- http://arxiv.org/abs/1904.07734v1
- http://arxiv.org/abs/2011.12216v3