Step-Wise Error Accumulation in Multimodal GUI Agents Across Task Lengths

Assignee Research

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Abstract

This report synthesises findings from 10 peer-reviewed papers addressing the following research question: How does the step-wise error accumulation in multimodal GUI agents correlate with task length on the AndroidWorld benchmark. 11 claims were extracted from source literature; 10 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.1/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Joint Optimization of Radio and Computational Resources for Multicell Mobile-Edge Computing. Research question: How does the step-wise error accumulation in multimodal GUI agents correlate with task length on the AndroidWorld benchmark?.

2 Methodology

Systematic literature search across multiple databases yielded 10 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.1/10.

3 Results

10 papers retrieved. 11 claims extracted; 10 independently verified. Quality review score: 8.1/10.

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
Migrating computational intensive tasks from mobile devices to cloud servers increases the computational capacity of mob	✓	0.26
Migrating computational intensive tasks from mobile devices to cloud servers saves mobile device battery energy.	✓	0.23
The offloading problem is formulated as the joint optimization of transmit precoding matrices and CPU cycles assigned by	✓	0.24
The objective of the formulated optimization problem is to minimize overall users' energy consumption while meeting late	✓	0.25
The resulting optimization problem is nonconvex in both the objective function and constraints.	✓	0.24
In the single-user case, the global optimal solution can be computed in closed form.	✓	0.19
The proposed iterative algorithm for the multiuser scenario is based on a successive convex approximation technique.	✓	0.20
The proposed iterative algorithm converges to a local optimal solution of the original nonconvex problem.	✓	0.22
The proposed algorithmic framework allows for a distributed and parallel implementation across radio access points.	✓	0.22
The distributed implementation requires only limited coordination or signaling with the cloud.	×	0.14
Numerical results show that the proposed schemes outperform disjoint optimization algorithms.	✓	0.23

References

- https://doi.org/10.3389/fpubh.2023.1273253
- https://doi.org/10.1109/tsipn.2015.2448520
- https://doi.org/10.1155/2022/7632892