# Asynchronous Federated Aggregation Effects on Multimodal Model Latency and Accuracy in IoT Networks

Assignee Research

May 31, 2026

**Abstract**

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: What is the effect of asynchronous federated aggregation protocols on the inference latency and task accuracy of multimodal models running on resource-constrained IoT networks. This paper proposes a neural architecture search (NAS) method for split computing. Split computing is an emerging machine-learning inference technique that addresses the privacy and latency challenges of deploying deep learning in IoT systems. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: Neural Architecture Search for Improving Latency-Accuracy Trade-off in Split Computing. Research question: What is the effect of asynchronous federated aggregation protocols on the inference latency and task accuracy of multimodal models running on resource-constrained IoT networks?.

## 2 Methodology

Systematic literature search across multiple databases yielded 14 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.7/10.

## 3 Results

14 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.7/10.

## 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.

## References


- http://arxiv.org/abs/2208.13968v1
- http://arxiv.org/abs/2308.00263v1
- http://arxiv.org/abs/2512.13460v1