International Journal of Computer Science and Engineering (IJCSE)
ISSN (P): 2278–9960; ISSN (E): 2278–9979
Vol. 14, Issue 1, Jan–Jun 2025; 629–636

International Academy of Science, Engineering and Technology
Connecting Researchers; Nurturing Innovations

DISTRIBUTED GANS IN CLOUD ENVIRONMENTS: ENHANCING COMPUTATIONAL EFFICIENCY AND SCALABILITY

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ABSTRACT

Generative Adversarial Networks (GANs) have gained significant attention in recent years for their ability to generate high-quality data across various domains. However, training GANs on large datasets often requires substantial computational resources, which can be a bottleneck. In this paper, we explore the use of distributed GAN architectures in cloud environments to enhance computational efficiency and scalability. By leveraging cloud resources, we demonstrate how the distribution of GAN components across multiple nodes can optimize processing time, reduce latency, and improve model performance. We also discuss various cloud deployment strategies, such as public and private clouds, and examine their impact on the training process. Our findings suggest that distributed GANs in cloud settings can provide significant advantages, particularly in handling large-scale data and achieving real-time model updates, thereby paving the way for more efficient and scalable machine learning workflows.

KEYWORDS: *Distributed GANs, Cloud Environments, Computational Efficiency, Scalability, Cloud Resources, Public Cloud, Private Cloud, Machine Learning.*

Article History

Received: *10 Apr 2025* | ***Revised:*** *10 Apr 2025* | ***Accepted:*** *11 Apr 2025*