

# The Implications of Exhausting Training Data in Artificial Intelligence Development

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**Abstract:** *Artificial Intelligence (AI) has advanced rapidly, primarily driven by the availability of large datasets used for training machine learning models. However, concerns are emerging regarding the potential exhaustion of useful and diverse training data. This paper explores the implications of running out of training data, the consequences for AI development, and potential strategies to mitigate this challenge.*

**Keywords:** Training Data Exhaustion, Data Augmentation, Synthetic Data Generation, Federated Learning