Core Fundamentals of Federated Learning and Machine Unlearning - Week 4

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CIFAR-10 Parameter Changes Comparison

	No Changes (Same as MNIST)	Improved Parameters
FC Layer Sizes	400 → 120 → 84 → 10	1024 → 512 → 256 → 10
Local Epochs	2	5
Communication Rounds	10	50
Learning Rate	0.005	0.001
Batch Size	32	128
Number of Clients	3	5
Final Test Accuracy	0.63	0.81

CIFAR-10 vs MNIST FedAvg Algorithm Comparison

	MNIST	CIFAR-10
Model Architecture	FCNN	CNN
Local Epochs	2	5
Communication Rounds	10	50
Learning Rate	0.005	0.001
Batch Size	32	128
Clients	3	5
Final Test Accuracy	0.97	0.81

The tables above shows that the FedAvg algorithm on more complex tasks require more computational time and more complex neural networks to achieve a similar training accuracy.