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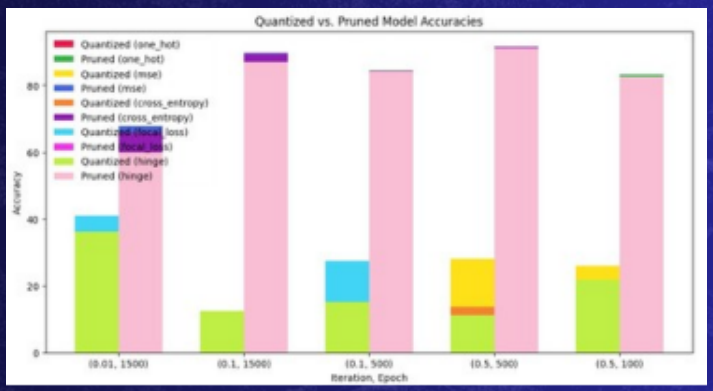
MODEL COMPRESSION TECHNIQUES FOR IMPROVED HANDWRITTEN DIGIT RECOGNITION

ABSTRACT

This study applies MLP neural networks to handwritten digit dataset classification and explores model compression techniques like quantization and pruning to reduce memory and computation requirements. Different loss functions (MSE, hinge, weighted cross-entropy, focal loss) were evaluated during quantization and pruning. Compressed models were rigorously evaluated using metrics like accuracy, precision, recall, class-wise loss, and confusion matrix. The results provide insights into compression strategies and loss function choice for deploying compact yet accurate MLP models on resource-constrained devices for handwritten digit recognition.

- **Quantization**
- **Pruning**
- **FeedForward Neural Network**
- **Loss Function**



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