

## Results and Observations

In the experiment using the CNNP (Convolutional Neural Network Prediction) technique for determining zero prediction error on the ImageNet dataset, I observed the following results across different epochs:

- 10 epochs: ~30,000 zero prediction errors
- 20 epochs: ~150,000 zero prediction errors
- 30 epochs: ~20,000 zero prediction errors

### Summary:

The prediction error fluctuates significantly across different epochs, with the highest error occurring at 20 epochs and a reduction at 30 epochs. This variation suggests that while training for more epochs doesn't consistently improve performance, there might be a learning instability or overfitting issue in your model at around 20 epochs.

### Way Ahead:

1. Analyze Learning Curves: Track training and validation loss to understand if the model is overfitting or underfitting.
2. Adjust Hyperparameters: Experiment with learning rate, batch size, or regularization techniques (e.g., dropout or weight decay) to stabilize learning.
3. Try Early Stopping: Use early stopping based on validation performance to avoid overtraining and maintain optimal error.
4. Fine-tuning the CNNP Model: You may try tuning convolutional layers, filters, or using techniques like transfer learning to reduce prediction error.