



# Mastering LLM Inference Parameters

Unlock the full potential of Large Language Models with  
these crucial settings



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1

# Temperature: Controlling Creativity

Adjust the randomness of outputs, balancing between  
focused and diverse responses



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2

# Top-k Sampling: Limiting Options

Restrict token selection to the k most probable choices,  
enhancing output coherence



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# Top-p Sampling (Nucleus): Dynamic Selection

Choose from a probability mass of  $p$ , adapting to varying token distributions



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4

## Max Tokens: Setting Boundaries

Define the maximum length of the generated text to control verbosity and processing time



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# Frequency Penalty: Encouraging Variety

Reduce repetition by penalizing tokens based on their frequency in the output



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6

## Presence Penalty: Promoting Novelty

Discourage redundancy by penalizing tokens that have already appeared in the text



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7

# Stop Tokens: Precise Termination

Define specific sequences to halt text generation, ensuring contextually appropriate endings



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# Optimizing LLM Performance

Fine-tune these parameters to achieve the desired balance of creativity, coherence, and precision in your LLM outputs



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