

Challenge:

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Can the two languages be distinguished using a bag-of-words approach?

No. Bag-of-words ignores character order, so it cannot differentiate languages that differ only by the order of segments.

Can the two languages be distinguished using a bigram or trigram based approach?

Only partially. Bigrams and trigrams capture short-range local patterns, so they can detect some differences near segment boundaries. However, they cannot reliably capture the full long-range dependency needed to distinguish the overall segment order, limiting their effectiveness.

Can the two languages be distinguished using a convolutional neural network?

To some extent. CNNs extract local features through filters and can learn local patterns such as segment transitions. But their fixed receptive field limits their ability to model long-range dependencies across distant segments unless the network is very deep or specially designed to capture global sequence structure.