**Enhancing Model Performance and Exploring Alternatives**

Current N-gram model demonstrates good accuracy in recipient detection. However, we can explore further improvements to enhance performance and potentially identify alternative models that might be better suited for this specific task.

**Improving N-gram Model Performance:**

**Increasing N-gram Size:**

Rationale: By considering an increase in the N-gram size, we can potentially capture longer sequences of characters. This is particularly beneficial for names with unique letter combinations or uncommon spellings.

Considerations: Larger N-grams require a substantial amount of data and computational resources. We'll need to assess the feasibility of scaling our infrastructure accordingly.

**Exploration of Alternative Models:**

**Word Embeddings:**

Approach: Instead of character-based models, we can propose exploring word embeddings such as Word2Vec, GloVe, or FastText.

Potential Benefits: Word embeddings capture semantic relationships between words, providing a more nuanced understanding of the data. Adapting these models to our specific use case can result potentially significant performance gains.

**Transformer Models:**

Approach: Models like BERT or GPT-3, which are based on transformer architectures, have demonstrated exceptional performance in various natural language processing (NLP) tasks.

Potential Benefits: Adapting these models for our specific use case could lead to improved accuracy and a better understanding of contextual nuances and Adapting these models to our specific use case can result potentially significant performance gains.

**Next Steps:**

* Evaluate the presented approaches and prioritize the most promising ones based on expected impact and feasibility.
* Implement and test the selected approaches on a subset of the data to assess their actual performance improvements.
* Based on the results, iterate and refine the chosen approaches to achieve optimal performance for our task.