

**Paper Title:** Building a Natural Language Processing Model to Extract Order Information from Customer Orders for Interpretative Order Management

**Paper Link:** <https://ieeexplore.ieee.org/abstract/document/9989801>

## **1. Summary:**

**1.1 Motivation/purpose/aims/hypothesis:** By employing a no-touch strategy based on NLP-based order interpretation, the study seeks to automate and optimize supply chain management procedures, particularly order management.

**1.2 Contribution:** To enable efficient order processing, the research presents an NLP model as a means of extracting and interpreting order information from natural language inquiries.

**1.3 Methodology:** Using a model architecture based on Bi-LSTM-CRF (Bidirectional LSTM and Conditional Random Field), the study uses a slot filling job to treat order information extraction as a sequence labeling problem.

**1.4 Conclusion:** In summary, the NLP-based approach provides a viable solution for order interpretation in supply chain scenarios by efficiently extracting order information from client text orders and voice transcripts.

## **2. Limitations:**

**2.1 First Limitation/Critique:** When clients want to change or cancel orders, the NLP model could encounter difficulties. This calls for the need for more capabilities to handle such situations.

**2.2 Second Limitation/Critique:** The model's capacity to correctly identify particular objects or qualities may differ depending on the kind and volume of training data that is available.

## **3. Synthesis:**

The concepts discussed in this paper have important ramifications for supply chain management applications in the actual world. The NLP-based order interpretation engine may improve a number of situations, including ordering replacement parts, self-service ordering in food and beverage, and situations where hands-free communication is essential. The model's future scope entails strengthening its ability to manage order cancellations or adjustments and increasing its resilience in a variety of supply chain scenarios.

The paper offers a thorough method for streamlining order processing with natural language processing (NLP), emphasizing how this technology can improve supply chain management

automation and efficiency. It also recognizes that additional improvements are required to solve some restrictions and accommodate more complicated order circumstances.