**SEQUENCE LABELING and SENTENCE ANALYSIS for NLP RELATED USE CASES**

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**Abstract:**

Given an annotated dataset of named entities, we train, test and validate a few Machine learning algorithms to perform one of the above-mentioned task, NER, POS or chunking, using the available library vsmlib for processing sentences into word vectors and then using these annotations and the word embeddings to train and generate predictions on the dataset or other similar dataset. Next, we will try to use the above said systems to implement basic user command processing or to understand the user’s sentences.

**1 Introduction:**

Currently we have a lot of existing systems to perform Chunking, POS and NER. We use a subset of these tools and then utilize the existing libraries in python, which help to perform the required task. Many research papers talk about analysis of active learning strategies for such tasks. Such comparisons help to make the right choice when we want to improve the accuracy and when we need to decide what exactly we can achieve using these methods and tools. We will utilize CONLL dataset to evaluate the performance of word embeddings on sequence labelling tasks. We build the classifier train it and test it and get the performance metrics. Later, we might upgrade the program to perform sentence analysis for helping our system interact and understand the user’s words and commands or we might implement an ANN/RNN to do the same.

**2 Related Work:**

Images about the stuff we’re gonna do. Examples of things done by previous researchers in this field.

**3 Approach:**

**3.1: breaking down approach.**

**3.2: Breaking down part 2.**

**3.3: Breaking down part 3.**

**4.Model Architecture:**

**5 Training Details:**

**6 Experiments and Results**

**7 Conclusion:**

**8 Future work**

**9 Acknowledgements:**

**References**

Tjong Kim Sang, E. F., & Buchholz, S. (2000, September). Introduction to the CoNLL-2000 shared task: Chunking. In Proceedings of the 2nd workshop on Learning language in logic and the 4th conference on Computational natural language learning-Volume 7 (pp. 127-132). Association for Computational Linguistics.