**Marathi SentiWordNet: A lexical resource for sentiment analysis of Marathi**

In November 2022,Hussein DMEDM et al. published a Marathi SentiWordNet (M-SWN) for Sentiment Analysis and its Application in Movie Reviews, Bascially they focused on Indian languages, particularly Marathi.The expansion of internet data and the prevalence of unstructured comments and reviews online pose challenges for researchers in this field. While previous works on SA have mainly concentrated on English, there is a limited amount of research on Indian languages such as Hindi, Telugu, Bengali, etc.

The proposed research introduces SA in Marathi, a language of Indian origin. The absence of a lexical resource for Marathi sentiment analysis is identified, prompting the development of a Marathi SentiWordNet (M-SWN). The method involves a synset-based expansion approach utilizing Marathi WordNet. The M-SWN includes Positive, Negative, and Neutral Polarity scores, derived from the Hindi-SentiWordNet (H-SWN). the impact of the negation challenge on sentiment analysis across structured, semi-structured, and unstructured reviews. Improvement in Accuracy Assess the effectiveness of each technique in improving accuracy for both theoretical and technical sentiment. Evaluate the clarity and interpretability and explaining the proposition of using techniques with respect to sentiment analysis.

Citi - Hussein, D. M. E. D. M. (2018). A survey on sentiment analysis challenges. *Journal of King Saud University-Engineering Sciences*, *30*(4), 330-338.

**Improving Multilingual Neural Machine Translation System for Indic Languages**

16 June 2023, Aggarwal Divyanshu et al. published a  Machine Translation System (MTS) which serves as effective tool for communication by translating text or speech from one language to another language. Recently, neural machine translation (NMT) has become popular for its performance and cost-effectiveness. However, NMT systems are restricted in translating low-resource languages as a huge quantity of data is required to learn useful mappings across languages. The need for an efficient translation system becomes obvious in a large multilingual environment like India. The MNMT converts many languages using a single model, which is extremely useful in terms of training process and lowering online maintenance costs. It is also helpful for improving low-resource translation. Our model comprises two MNMT systems, i.e., for English-Indic (one-to-many) and for Indic-English (many-to-one) with a shared encoder-decoder containing 15 language pairs (30 translation directions). Since most of IL pairs have a scanty amount of parallel corpora, not sufficient for training any machine translation model, we explore various augmentation strategies to improve overall translation quality through the proposed model. A state-of-the-art transformer architecture is used to realize the proposed model.

Citi - Aggarwal, D., Gupta, V., & Kunchukuttan, A. (2022). Indicxnli: Evaluating multilingual inference for indian languages. *arXiv preprint arXiv:2204.08776*.

**A Systematic Review of Stemmers of Indian and Non-Indian Vernacular Languages**

15 Jan 2024, Lahoti P. et al. published a  Systematic Review of Stemmers of Indian and Non-Indian Vernacular Languages, Basically It facilitates the extraction of morphological variants of a root or base word from the provided word. Over the period, several stemmers for various vernacular languages have been proposed. However, very few research studies have comprehensively investigated these available stemmers. First the various stemmers of 15 Indian and 17 non-Indian languages describing their key points, benefits, and drawbacks. All the Indian languages for which stemmers have been built are covered in this study. For the non-Indian languages, stemmers of commonly spoken languages have been covered. Second, we present a language-wise comparative analysis of stemmers based on our identified parameters.  and the wordnets and dictionaries available for different languages. Fourth, we provide details of the datasets available for various languages. Fifth, we also provide challenges in existing stemmers and future directions for future researchers. The study presented in this article reveals that significant research has been carried out for the stemmers of influential languages such as English, Arabic, and Urdu. However , languages with d resources, such as Farsi, Polish, Odia, Amharic, and others, have received the least attention for research.

Citi - Lahoti, P., Mittal, N., & Singh, G. (2022). A survey on nlp resources, tools, and techniques for marathi language processing. *ACM Transactions on Asian and Low-Resource Language Information Processing*, *22*(2), 1-34.