1 ABSA in Indian Languages

Aspect-Based Sentiment Analysis (ABSA) has experienced a surge in research in Indian languages, particularly addressing challenges such as resource scarcity and linguistic complexity. This section provides a comprehensive overview of key developments in the field.

2 Hindi ABSA

- Pioneering Work: First comprehensive ABSA framework with 5,417 annotated reviews across 12 domains, addressing
- aspect term extraction (41.04% F1-score using CRF) and **sentiment classification** (54.05% accuracy with SVM) [4][7][8].
- Advanced Models: Ensembled mBERT models achieved state-of-the-art results for aspect category detection and polarity classification, demonstrating transfer learning's effectiveness in low-resource settings [1][15].
- Domain Coverage: Includes restaurants, electronics, and hospitality. Annotated datasets for aspect categories like Price, Food, and Service [9][16].

3 Bengali ABSA

- BERT Adoption: First use of BERT for ABSA, outperforming traditional models (SVM, CNN) on datasets from social media and news portals [2].
- Aspect Annotation**: Manually labeled datasets across five aspects (*Technology*, *Corruption*) and three sentiment polarities [2].

4 Telugu ABSA

- Benchmark Dataset: Annotated corpus for three tasks: aspect term extraction, polarity classification, and categorization, validated via BiLSTM and CNN models [6][29].
- Multi-Domain Focus: Includes reviews on electronics, books, and movies [6].

5 Odia ABSA

- First Benchmark**: Newly created dataset for aspect term extraction and polarity classification across seven domains (e.g., *Handloom Sarees*, *Odia Movies*), achieving 77.20% accuracy with IndicBERT [3].
- Data Augmentation**: Combined back-translation and T5 paraphrase generation to overcome data scarcity [3].

6 Malayalam and Others

- Emerging Work**: Preliminary studies using machine learning, though resources remain limited [11][14].
- Cross-Language Surveys**: Highlight progress in Hindi, Bengali, Telugu, Urdu, and Malayalam while identifying gaps in Kannada, Nepali, and other languages [5][14].

7 Challenges and Trends

- Resource Limitations**: Most studies rely on small, manually annotated datasets (e.g., 1,000–5,000 sentences) [3][6].
- Model Innovations: Shift from CRF/SVM (2016–2020) to transformer-based models like mBERT and XLM-R (2021–2025) [1][3][15].
- Domain Generalization: Efforts to align datasets with international benchmarks (e.g., SemEval) for better comparability [3][6].

While ABSA research in Indian languages is advancing, languages like Odia and Malayalam remain under-resourced compared to Hindi and Bengali. Recent work emphasizes cross-lingual transfer learning and synthetic data generation to bridge this gap [3][5].

8 Useful resources

1. https://www.mdpi.com/2079-9292/10/21/2641https://www.mdpi.com/2079-9292/10/21/2641
2. https://thesai.org/Downloads/Volume13No12/Paper_112-Aspect_based_Sentiment_Analysis_for_Bengali_Text.pdf
3. https://aclanthology.org/2025.coling-main.391.pdf
4. https://www.cse.iitb.ac.in/~pb/papers/lrec16-sentiment-resource.pdf
5. https://www.cfilt.iitb.ac.in/resources/surveys/2022/kunal_CrossLingualABSA_survey_2022.pdf
6. https://aclanthology.org/2020.lrec-1.617/
7. https://iitp.ac.in/~shad.pcs15/data/Tutorial-SA-Hindi-GIAN.pdf
8. https://www.cse.iitb.ac.in/~pb/papers/cicling16-aspect-based-sa.pdf
9. https://aclanthology.org/L16-1429/
10. https://www.researchgate.net/publication/372289987_ASPECT-BASED_SENTIMENT_ANALYSIS_A_COMPREHENSIVE_SURVEY_OF_TECHNIQUES_AND_APPLICATIONS
11. https://ieeexplore.ieee.org/document/10143021/
12. https://web2py.iiit.ac.in/research_centres/publications/download/masterstthesis.pdf.b42c721e7c36be1e.5961736877616e74685f5468657369735f66696e616c2e706466.pdf
13. https://arxiv.org/html/2311.10777v4

14. https://ieeexplore.ieee.org/document/10392226/

15. https://www.researchgate.net/publication/355871180_Aspect-Based_Sentiment_Analysis_in_Hindi_Language_by_Ensembling_Pre-Trained_mBERT_Models

16. https://www.researchgate.net/publication/323875540_Aspect_Based_Sentiment_Analysis_Category_Detection_and_Sentiment_Classification_for_Hindi

17. https://ieeexplore.ieee.org/document/9402365/

18. https://dl.acm.org/doi/10.1145/3485243

19. https://www.researchgate.net/publication/379119554_Rule-Based_Approach_in_Aspect-Based_Sentiment_Analysis_of_Hindi_Text

20. https://paperswithcode.com/datasets?q=Hostility+Detection+Dataset+in+Hindi&lang=telugu

21. https://www.researchgate.net/figure/Flow-of-Design-for-Odia-SentiWordNet_fig1_322582732

22. https://dl.acm.org/toc/tallip/current

23. https://www.researchgate.net/publication/329667038_A_journey_of_Indian_languages_over_Sentiment_analysis_a_systematic_review

24. https://www.ijnrd.org/viewpaperforall.php?paper=IJNRD2303129

25. https://iitp.ac.in/~shad.pcs15/data/Tutorial-SA-Hindi-GIAN.pdf

26. https://aclanthology.org/2020.lrec-1.617/

27. https://www.mdpi.com/2079-9292/10/21/2641