Annotated Bibliography

Anany Sachan

September 4, 2025

References

[1] Ringki Das and Thoudam Doren Singh. Multimodal sentiment analysis: A survey of methods, trends, and challenges. *ACM Comput. Surv.*, 55(13s), July 2023.

Das and Singh (2023) present a comprehensive survey on the evolution of sentiment analysis from text-based methods to multimodal approaches that integrate audio, visual, and textual information. The article reviews traditional techniques such as lexicon-based and machine learning models, and highlights the role of deep learning and transformer-based architectures in advancing multimodal sentiment detection as well as identifying trends such as the growing reliance on pretrained language models and cross-modal embeddings. It discusses applications in domains like politics, healthcare, finance, and social media, while also emphasizing challenges such as sarcasm detection, inter- and intra-modality dynamics, low-resource languages, and high computational costs. The authors catalog widely used sentiment lexicons, benchmark datasets (e.g., IMDB, SST, CMU-MOSEI), and evaluation metrics, offering guidance for new researchers in the field. Published in ACM Computing Surveys and peer-reviewed, the work is highly credible and valuable for understanding both the state of the art and open research directions in multimodal sentiment analysis.

[2] Saif M. Mohammad. Sentiment analysis: Automatically detecting valence, emotions, and other affectual states from text. In Herb Meiselman, editor, *Emotion Measurement (Second Edition)*. Elsevier, 2021.

Mohammad (2021) provides a comprehensive survey of sentiment analysis, tracing its evolution from early polarity detection in product reviews to contemporary models that capture valence, discrete emotions, and complex affectual states. The chapter outlines major challenges—including subtle and figurative language, cross-cultural variation, and the difficulty of obtaining annotated data—while also surveying advances in machine learning such as deep neural networks, transfer learning, and contextual embeddings. It reviews resources like emotion lexicons, annotated corpora, and shared evaluation tasks, emphasizing their role in advancing the field. Importantly, Mohammad highlights ethical concerns, noting that sentiment systems can reproduce and amplify

human biases, raising fairness issues in applications such as hiring, lending, and public policy. Published in Emotion Measurement 2021, the work is both highly credible and well-grounded in both theory and practice. Its breadth makes it highly relevant to projects exploring sentiment classification, as it not only synthesizes two decades of scholarship but also identifies open research problems, such as modeling figurative language and ensuring fairness in NLP systems.

[3] Bo Pang, Lillian Lee, and Shivakumar Vaithyanathan. Thumbs up? sentiment classification using machine learning techniques. In *Proceedings of the ACL-02 Conference on Empirical Methods in Natural Language Processing - Volume 10*, EMNLP '02, pages 79–86, USA, 2002. Association for Computational Linguistics.

Pang, Lee, and Vaithyanathan (2002) investigate sentiment classification, aiming to categorize documents by overall opinion rather than topic. Using a large dataset of movie reviews, they compare Naive Bayes, maximum entropy, and support vector machines, finding that these algorithms significantly outperform human-selected word lists but still achieve lower accuracy than in topic-based classification. The paper highlights challenges unique to sentiment analysis, including subtle language cues, rhetorical contrasts, and the need for contextual understanding (e.g., negation). Published in the *Proceedings of EMNLP* and widely cited, the work is highly credible and foundational to sentiment analysis research. While the paper's models may seem simple by today's standards, they illustrate enduring concepts such as feature representation (bag-of-words, unigrams vs. bigrams) and classification tradeoffs. As a cornerstone in the field, this source highlights the early challenges of sentiment analysis and sets the stage for evaluating modern neural and transformer-based approaches.