

## DAFTAR PUSTAKA

- Af'idah, D. I., Anggraeni, P. D., Rizki, M., Setiawan, A. B., & Handayani, S. F. (2023). Aspect-Based Sentiment Analysis for Indonesian Tourist Attraction Reviews Using Bidirectional Long Short-Term Memory. *JUITA : Jurnal Informatika*, 11(1), 27. <https://doi.org/10.30595/juita.v11i1.15341>
- Al-Smadi, M., Qawasmeh, O., Al-Ayyoub, M., Jararweh, Y., & Gupta, B. (2018). Deep Recurrent neural network vs. support vector machine for aspect-based sentiment analysis of Arabic hotels' reviews. *Journal of Computational Science*, 27, 386–393. <https://doi.org/10.1016/j.jocs.2017.11.006>
- Antonakaki, D., Fragopoulou, P., & Ioannidis, S. (2021). A survey of Twitter research: Data model, graph structure, sentiment analysis and attacks. *Expert Systems with Applications*, 164(September 2020), 114006. <https://doi.org/10.1016/j.eswa.2020.114006>
- Aris Supriyanto, S. (2018). *Implementation Data Mining using Decision Tree Method- Algorithm C4.5 for Postpartum Depression Diagnosis*No Title.
- Atta-Ur-Rahman, Sultan, K., Aldhafferi, N., & Alqahtani, A. (2018). Educational data mining for enhanced teaching and learning. *Journal of Theoretical and Applied Information Technology*, 96(14), 4417–4427.
- Aydin, C. R., & Gungor, T. (2020). Combination of recursive and recurrent neural networks for aspect-based sentiment analysis using inter-aspect relations. *IEEE Access*, 8, 77820–77832. <https://doi.org/10.1109/ACCESS.2020.2990306>
- Barrón Estrada, M. L., Zatarain Cabada, R., Oramas Bustillos, R., & Graff, M. (2020). Opinion mining and emotion recognition applied to learning environments. *Expert Systems with Applications*, 150. <https://doi.org/10.1016/j.eswa.2020.113265>
- Bello, A., Ng, S. C., & Leung, M. F. (2023). A BERT Framework to Sentiment Analysis of Tweets. *Sensors*, 23(1). <https://doi.org/10.3390/s23010506>
- Birjali, M., Kasri, M., & Beni-Hssane, A. (2021). A comprehensive survey on sentiment analysis: Approaches, challenges and trends. *Knowledge-Based Systems*, 226. <https://doi.org/10.1016/j.knosys.2021.107134>
- Chen, X., & Xie, H. (2020). A Structural Topic Modeling-Based Bibliometric Study of Sentiment Analysis Literature. *Cognitive Computation*, 12(6), 1097–1129. <https://doi.org/10.1007/s12559-020-09745-1>
- Daqiqil, I., Saputra, H., Syamsudhuha, Kurniawan, R., & Andriyani, Y. (2024). Sentiment analysis of student evaluation feedback using transformer-based language models. *Indonesian Journal of Electrical Engineering and Computer Science*, 36(2), 1127–1139. <https://doi.org/10.11591/ijeecs.v36.i2.pp1127-1139>

- Fitri, E. (2020). Analisis Sentimen Terhadap Aplikasi Ruangguru Menggunakan Algoritma Naive Bayes, Random Forest Dan Support Vector Machine. *Jurnal Transformatika*, 18(1), 71. <https://doi.org/10.26623/transformatika.v18i1.2317>
- Gruber, N. (2021). Detecting dynamics of action in text with a recurrent neural network. *Neural Computing and Applications*, 33(22), 15709–15718. <https://doi.org/10.1007/s00521-021-06190-5>
- Injadat, M. N., Moubayed, A., Nassif, A. B., & Shami, A. (2020). Systematic ensemble model selection approach for educational data mining. *Knowledge-Based Systems*, 200, 105992. <https://doi.org/10.1016/j.knosys.2020.105992>
- Jacinto, R., Reis, E., & Ferrão, J. (2020). Indicators for the assessment of social resilience in flood-affected communities – A text mining-based methodology. *Science of the Total Environment*, 744, 140973. <https://doi.org/10.1016/j.scitotenv.2020.140973>
- Kastrati, Z., Dalipi, F., Imran, A. S., Nuci, K. P., & Wani, M. A. (2021). Sentiment analysis of students' feedback with nlp and deep learning: A systematic mapping study. *Applied Sciences (Switzerland)*, 11(9). <https://doi.org/10.3390/app11093986>
- Kastrati, Z., Imran, A. S., & Kurti, A. (2020). Weakly Supervised Framework for Aspect-Based Sentiment Analysis on Students' Reviews of MOOCs. *IEEE Access*, 8, 106799–106810. <https://doi.org/10.1109/ACCESS.2020.3000739>
- Kingma, D. P., & Ba, J. L. (2015). Adam: A method for stochastic optimization. *3rd International Conference on Learning Representations, ICLR 2015 - Conference Track Proceedings*, 1–15.
- Koto, F., Rahimi, A., Lau, J. H., & Baldwin, T. (2020). IndoLEM and IndoBERT: A Benchmark Dataset and Pre-trained Language Model for Indonesian NLP. *COLING 2020 - 28th International Conference on Computational Linguistics, Proceedings of the Conference*, 757–770. <https://doi.org/10.18653/v1/2020.coling-main.66>
- Kristiyanti, D. A., Sanjaya, S. A., Tjokro, V. C., & Suhali, J. (2024). Dealing imbalance dataset problem in sentiment analysis of recession in Indonesia. *IAES International Journal of Artificial Intelligence*, 13(2), 2058–2070. <https://doi.org/10.11591/ijai.v13.i2.pp2060-2072>
- Kulkarni, S. M., & Sundari, G. (2021). Comparative analysis of performance of deep cnn based framework for brain mri classification using transfer learning. *Journal of Engineering Science and Technology*, 16(4), 2901–2917.
- Kusumaningrum, R., Wiedjayanto, M. I. A., Adhy, S., & Suryono. (2017). Classification of Indonesian news articles based on Latent Dirichlet Allocation. *Proceedings of 2016 International Conference on Data and Software Engineering, ICoDSE 2016*, 1–5. <https://doi.org/10.1109/ICODSE.2016.7936106>

- Ligthart, A., Catal, C., & Tekinerdogan, B. (2021). Systematic reviews in sentiment analysis: a tertiary study. In *Artificial Intelligence Review* (Vol. 54, Issue 7). Springer Netherlands. <https://doi.org/10.1007/s10462-021-09973-3>
- Lin, S. Y., Kung, Y. C., & Leu, F. Y. (2022). Predictive intelligence in harmful news identification by BERT-based ensemble learning model with text sentiment analysis. *Information Processing and Management*, 59(2). <https://doi.org/10.1016/j.ipm.2022.102872>
- Liu, M. Z., Zhou, F. Y., Chen, K., & Zhao, Y. (2021). Co-attention networks based on aspect and context for aspect-level sentiment analysis. *Knowledge-Based Systems*, 217. <https://doi.org/10.1016/j.knosys.2021.106810>
- Liu, X., & Wang, C. (2021). An empirical study on hyperparameter optimization for fine-tuning pre-trained language models. *ACL-IJCNLP 2021 - 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing, Proceedings of the Conference, Section 4*, 2286–2300. <https://doi.org/10.18653/v1/2021.acl-long.178>
- Ma, X. (2024). Artificial intelligence-driven education evaluation and scoring: Comparative exploration of machine learning algorithms. *Journal of Intelligent Systems*, 33(1). <https://doi.org/10.1515/jisys-2023-0319>
- Ma, Y., Huang, R., Yan, M., Li, G., & Wang, T. (2022). Attention-based Local Mean K-Nearest Centroid Neighbor Classifier. *Expert Systems with Applications*, 201(April). <https://doi.org/10.1016/j.eswa.2022.117159>
- Marcińczuk Michał and Gniewkowski, M., Walkowiak, T., & Kedkowski, M. (2021). Text Document Clustering: {W}ordnet vs. {TF}-{IDF} vs. Word Embeddings. *Proceedings of the 11th Global Wordnet Conference*, 207–214. <https://www.aclweb.org/anthology/2021.gwc-1.24>
- Musril, H. A., Saludin, S., Firdaus, W., Usanto, S., Kundori, K., & Rahim, R. (2023). Using k-NN Artificial Intelligence for Predictive Maintenance in Facility Management. *SSRG International Journal of Electrical and Electronics Engineering*, 10(6), 1–8. <https://doi.org/10.14445/23488379/IJEEE-V10I6P101>
- Nawang, H., Makhtar, M., & Hamzah, W. M. A. F. W. (2022). Comparative analysis of classification algorithm evaluations to predict secondary school students' achievement in core and elective subjects. *International Journal of Advanced Technology and Engineering Exploration*, 9(89), 430–445. <https://doi.org/10.19101/IJATEE.2021.875311>
- Niu, B., Ren, J., Zhao, A., & Li, X. (2020). Lender trust on the P2P lending: Analysis based on sentiment analysis of comment text. *Sustainability (Switzerland)*, 12(8). <https://doi.org/10.3390/SU12083293>
- Nurdin, A., Anggo Seno Aji, B., Bustamin, A., & Abidin, Z. (2020). Perbandingan Kinerja Word Embedding Word2Vec, Glove, Dan Fasttext Pada Klasifikasi Teks. *Jurnal Tekno Kompak*, 14(2), 74. <https://doi.org/10.33365/jtk.v14i2.732>

- Nuryani, & Mahayana, D. (2021). Analisis Sentimen Berbasis Aspek dengan Deep Learning Ditinjau dari Sudut Pandang Filsafat Ilmu. *Jumanji*, 4(2), 70–85.
- Ozyurt, B., & Akcayol, M. A. (2021). A new topic modeling based approach for aspect extraction in aspect based sentiment analysis: SS-LDA. *Expert Systems with Applications*, 168(March), 114231. <https://doi.org/10.1016/j.eswa.2020.114231>
- Perwira, R. I., Permadi, V. A., Purnamasari, D. I., & Agusdin, R. P. (2025). Domain-Specific Fine-Tuning of IndoBERT for Aspect-Based Sentiment Analysis in Indonesian Travel User-Generated Content. *Journal of Information Systems Engineering and Business Intelligence*, 11(1), 30–40. <https://doi.org/10.20473/jisebi.11.1.30-40>
- Putri, D. I., Alfian, A. N., Putra, M. Y., & Mulyo, P. D. (2024). IndoBERT Model Analysis: Twitter Sentiments on Indonesia's 2024 Presidential Election. *Journal of Applied Informatics and Computing*, 8(1), 7–12. <https://doi.org/10.30871/jaic.v8i1.7440>
- Putri Elisa, A. R. I. (2024). *Comparison Of Random Forest, Support Vector Machine And Naive Bayes Algorithms To Analyze Sentiment Towards Mental Health Stigma* (Vol. 5, pp. 321–329).
- Raffel, C., Shazeer, N., Roberts, A., Lee, K., Narang, S., Matena, M., Zhou, Y., Li, W., & Liu, P. J. (2020). Exploring the limits of transfer learning with a unified text-to-text transformer. *Journal of Machine Learning Research*, 21, 1–67.
- Raftopoulos, G., Davrazos, G., & Kotsiantis, S. (2024). *Fair and Transparent Student Admission Prediction Using Machine Learning Models*.
- Rajput, Q., Haider, S., & Ghani, S. (2016). Lexicon-Based Sentiment Analysis of Teachers' Evaluation. *Applied Computational Intelligence and Soft Computing*, 2016, 1–12. <https://doi.org/10.1155/2016/2385429>
- Ramasamy, M., & Elangovan, M. (2024). Optimized neural attention mechanism for aspect-based sentiment analysis framework with optimal polarity-based weighted features. *Knowledge and Information Systems*, 66(4), 2501–2535. <https://doi.org/10.1007/s10115-023-01998-0>
- Razaq, A., Rahman, · Zahid Halim · Atta Ur, & Kholla, S. (2024). *Identifcation of paraphrased text in research articles through improved embeddings and fne-tuned BERT mode*.
- Saab, S., Fu, Y., Ray, A., & Hauser, M. (2021). A Dynamically Stabilized Recurrent Neural Network. *Neural Processing Letters*. <https://doi.org/10.1007/s11063-021-10676-7>
- Salazar, C., Aguilar, J., Monsalve-Pulido, J., & Montoya, E. (2021). Affective recommender systems in the educational field. A systematic literature review. *Computer Science Review*, 40, 100377. <https://doi.org/10.1016/j.cosrev.2021.100377>
- Sayed, M. S., Mohan, V., & Muthu, K. S. (2023). BERT: A Review of

- Applications in Sentiment Analysis. *HighTech and Innovation Journal*, 4(2), 453–462. <https://doi.org/10.28991/HIJ-2023-04-02-015>
- Seob, Y., Kyo, J., Oh, J., Ki, C., Ho, C., & Choi, J. (2020). Pseudo - random number generation using LSTMs. *The Journal of Supercomputing*, 76(10), 8324–8342. <https://doi.org/10.1007/s11227-020-03229-7>
- Serebryakov, S., Milojevic, D., Vassilieva, N., Fleischman, S., & Clark, R. D. (2019). Deep learning cookbook: Recipes for your AI infrastructure and applications. *Proceedings of the 4th IEEE International Conference on Rebooting Computing, ICRC 2019, DL*, 1–9. <https://doi.org/10.1109/ICRC.2019.8914704>
- Sharazita Dyah Anggita, & Ikamah. (2020). Algorithm Comparison of Naive Bayes and Support Vector Machine based on Particle Swarm Optimization in Sentiment Analysis of Freight Forwarding Services. *Jurnal RESTI (Rekayasa Sistem Dan Teknologi Informasi)*, 4(2), 362–369. <https://doi.org/10.29207/resti.v4i2.1840>
- Skarpathiotaki, C. G., & Psannis, K. E. (2022). Cross-Industry Process Standardization for Text Analytics. *Big Data Research*, 27(2). <https://doi.org/10.1016/j.bdr.2021.100274>
- Song, Y., Wang, J., Liang, Z., Liu, Z., & Jiang, T. (2020). Utilizing BERT Intermediate Layers for Aspect Based Sentiment Analysis and Natural Language Inference. *ArXiv.Org*.
- Sun, Y., Li, G., Du, J., Ning, B., & Chen, H. (2022). A subgraph matching algorithm based on subgraph index for knowledge graph. *Frontiers of Computer Science*, 16(3), 1–18. <https://doi.org/10.1007/s11704-020-0360-y>
- Sutherland, A., Bensch, S., Hellström, T., Magg, S., & Wermter, S. (2020). Tell Me Why You Feel That Way: Processing Compositional Dependency for Tree-LSTM Aspect Sentiment Triplet Extraction (TASTE). *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 12396 LNCS, 660–671. [https://doi.org/10.1007/978-3-030-61609-0\\_52](https://doi.org/10.1007/978-3-030-61609-0_52)
- Trisna, P. (2024). *Aspect-Based Sentiment Analysis for Enhanced Understanding of Kemenkeu Tweets*.
- Ummah, M. S. (2024). K-Alpha Calculator-Krippendorff's Alpha Calculator : A user-friendly tool for computing Krippendorff's Alpha inter-rater reliability coefficient. *Sustainability (Switzerland)*, 11(1), 1–14. [http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484\\_SISTEM\\_PEMBETUNGAN\\_TERPUSAT\\_STRATEGI\\_MELESTARI](http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI)
- van der Linden, J. G. M., de Weerd, M. M., & Demirović, E. (2022). Fair and Optimal Decision Trees: A Dynamic Programming Approach. *Advances in Neural Information Processing Systems*, 35(NeurIPS).

- Wang, F., Li, Y., Zhang, W., & Zhong, S. (2021). *A More Fine-Grained Aspect-Sentiment-Opinion Triplet Extraction Task*. <http://arxiv.org/abs/2103.15255>
- Wang, X., Jiang, W., & Luo, Z. (2016). *Combination of Convolutional and Recurrent Neural Network for Sentiment Analysis of Short Texts*. 2428–2437.
- Watori, J., Aryanti, R., Junaidi, A., & Yani, A. (2020). Penggunaan Algoritma Klasifikasi Terhadap Analisa Sentimen Pemindahan Ibukota Dengan Pelabelan Otomatis. In *Jurnal Informatika* (Vol. 7, Issue 1, pp. 85–90). <https://doi.org/10.31311/ji.v7i1.7528>
- Wu, C., Ma, B., Liu, Y., Zhang, Z., Deng, N., Li, Y., Chen, B., Zhang, Y., Plank, B., & Xue, Y. (2025). *M-ABSA: A Multilingual Dataset for Aspect-Based Sentiment Analysis*. <http://arxiv.org/abs/2502.11824>
- Wu, Z., & Ong, D. C. (2020). *Context-Guided BERT for Targeted Aspect-Based Sentiment Analysis*. <http://arxiv.org/abs/2010.07523>
- Xu, H., Zhang, D., Zhang, Y., & Xu, R. (2024). HITSZ-HLT at SIGHAN-2024 dimABSA Task: Integrating BERT and LLM for Chinese Dimensional Aspect-Based Sentiment Analysis. *Proceedings of the 10th SIGHAN Workshop on Chinese Language Processing (SIGHAN-10)*, 175–185. <https://aclanthology.org/2024.sighan-1.20>
- Zheng, J., & Zheng, L. (2019). A Hybrid Bidirectional Recurrent Convolutional Neural Network Attention-Based Model for Text Classification. *IEEE Access*, 7, 106673–106685. <https://doi.org/10.1109/ACCESS.2019.2932619>
- Zhu, Y., Wu, X., Qiang, J., Hu, X., Zhang, Y., & Li, P. (2022). Representation learning with deep sparse auto-encoder for multi-task learning. *Pattern Recognition*, 129. <https://doi.org/10.1016/j.patcog.2022.108742>
- Zulqarnain, M., Ghazali, R., Hassim, Y. M. M., & Aamir, M. (2021). An Enhanced Gated Recurrent Unit with Auto-Encoder for Solving Text Classification Problems. *Arabian Journal for Science and Engineering*, 46(9), 8953–8967. <https://doi.org/10.1007/s13369-021-05691-8>