

DAFTAR PUSTAKA

- Al-Bayati, A. Q., Al-Araji, A. S., & Ameen, S. H. (2020). Arabic Sentiment Analysis (ASA) Using Deep Learning Approach. *Journal of Engineering*, 26(6), 85–93. <https://doi.org/10.31026/j.eng.2020.06.07>
- Arbane, M., Benlamri, R., Brik, Y., & Alahmar, A. D. (2023). Social Media-based COVID-19 Sentiment Classification Model using Bi-LSTM. *Expert Systems with Applications*, 212, 118710. <https://doi.org/10.1016/j.eswa.2022.118710>
- Asur, S., & Huberman, B. A. (2010). Predicting The Future with Social Media. *Proceedings - 2010 IEEE/WIC/ACM International Conference on Web Intelligence, WI 2010*, 1, 492–499. <https://doi.org/10.1109/WI-IAT.2010.63>
- Atandoh, P., Fengli, Z., Adu-Gyamfi, D., Leka, H. L., & Atandoh, P. H. (2021). A Glove CNN-Bilstm Sentiment Classification. *2021 18th International Computer Conference on Wavelet Active Media Technology and Information Processing (ICCWAMTIP)*, 245–249. <https://doi.org/10.1109/ICCWAMTIP53232.2021.9674171>
- Bergstra, J., & Bengio, Y. (2012). Random Search for Hyper-parameter Optimization. *Journal of Machine Learning Research*, 13, 281–305.
- Bordoloi, M., & Biswas, S. K. (2023). Sentiment Analysis: A Survey on Design Framework, Applications and Future Scopes. *Artificial Intelligence Review*, 56(11), 12505–12560. <https://doi.org/10.1007/s10462-023-10442-2>
- Bozuyula, M., & Özçift, A. (2022). Developing a Fake News Identification Model with Advanced Deep Language Transformers for Turkish COVID-19 Misinformation Data. *Turkish Journal of Electrical Engineering and Computer Sciences*, 30(3), 908–926. <https://doi.org/10.55730/1300-0632.3818>
- Chi, D., Huang, T., Jia, Z., & Zhang, S. (2025). Research on Sentiment Analysis of Hotel Review Text Based on BERT-TCN-BiLSTM-Attention Model. *Array*, 25, 100378. <https://doi.org/10.1016/j.array.2025.100378>
- Cho, K., van Merriënboer, B., Gulcehre, C., Bahdanau, D., Bougares, F., Schwenk, H., & Bengio, Y. (2014). Learning Phrase Representations using RNN Encoder–Decoder for Statistical Machine Translation. *Proceedings of the 2014 Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 1724–1734. <https://doi.org/10.3115/v1/D14-1179>
- Chung, J., Gulcehre, C., Cho, K., & Bengio, Y. (2014). Empirical Evaluation of Gated Recurrent Neural Networks on Sequence Modeling. *ArXiv*. <https://doi.org/10.48550/arXiv.1412.3555>
- Devlin, J., Chang, M. W., Lee, K., & Toutanova, K. (2018). BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding. *NAACL HLT 2019 - 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies - Proceedings of the Conference*, 1, 4171–4186. <https://arxiv.org/pdf/1810.04805>

- Durairaj, A. K., & Chinnalagu, A. (2021). Transformer based Contextual Model for Sentiment Analysis of Customer Reviews: A Fine-tuned BERT. *International Journal of Advanced Computer Science and Applications*, 12(11). <https://doi.org/10.14569/IJACSA.2021.0121153>
- Ferro, M. V., Mosquera, Y. D., Pena, F. J. R., & Bilbao, V. M. D. (2022). Absolute Convergence and Error Thresholds in Non-Active Adaptive Sampling. *Journal of Computer and System Sciences*, 129, 39–61. <https://doi.org/10.1016/j.jcss.2022.05.002>
- Gao, Q., & Esquivel, J. A. (2024). Research on Online Review Text Sentiment Analysis Using RoBERTa and BiLSTM Hybrid Method Based on Attention Mechanism. *2024 5th International Conference on Big Data and Artificial Intelligence and Software Engineering, ICBASE 2024*, 98–101. <https://doi.org/10.1109/ICBASE63199.2024.10762468>
- Ghosh, T., Banna, Md. H. Al, Nahian, Md. J. Al, Uddin, M. N., Kaiser, M. S., & Mahmud, M. (2023). An Attention-based Hybrid Architecture with Explainability for Depressive Social Media Text Detection in Bangla. *Expert Systems with Applications*, 213, 119007. <https://doi.org/10.1016/j.eswa.2022.119007>
- Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep Learning*. MIT Press. <https://www.deeplearningbook.org/>
- Graves, A., Mohamed, A., & Hinton, G. (2013). Speech Recognition with Deep Recurrent Neural Networks. *2013 IEEE International Conference on Acoustics, Speech and Signal Processing*, 6645–6649. <https://doi.org/10.1109/ICASSP.2013.6638947>
- Haddi, E., Liu, X., & Shi, Y. (2013). The Role of Text Pre-Processing in Sentiment Analysis. *Procedia Computer Science*, 17, 26–32. <https://doi.org/10.1016/J.PROCS.2013.05.005>
- Hidayat, I. R., & Maharani, W. (2022). General Depression Detection Analysis Using IndoBERT Method. *International Journal on Information and Communication Technology (IJICT)*, 8(1), 41–51. <https://doi.org/10.21108/ijoint.v8i1.634>
- Houdt, G. Van, Mosquera, C., & Nápoles, G. (2020). A Review on The Long Short-Term Memory Model. *Artificial Intelligence Review*, 53(8), 5929–5955. <https://doi.org/10.1007/s10462-020-09838-1>
- Huang, Z., Xu, W., & Yu, K. (2015). Bidirectional LSTM-CRF Models for Sequence Tagging. *arXiv*. <http://arxiv.org/abs/1508.01991>
- Islam, Md. S., & Ghani, N. A. (2022). A Novel BiGRUBiLSTM Model for Multilevel Sentiment Analysis Using Deep Neural Network with BiGRU-BiLSTM. *Lecture Notes in Electrical Engineering*, 730, 403–414. https://doi.org/10.1007/978-981-33-4597-3_37
- Jia, J., Liang, W.-C., & Liang, Y. (2023). A Review of Hybrid and Ensemble in Deep Learning for Natural Language Processing. *arXiv.org*. <https://doi.org/10.48550/ARXIV.2312.05589>
- Jian, W., Li, J. P., Akbar, M. A., Haq, A. U., Khan, S., Alotaibi, R. M., & Alajlan, S. A. (2024). SA-Bi-LSTM: Self Attention With Bi-Directional LSTM-Based Intelligent Model for Accurate Fake News Detection to Ensured Information Integrity on Social

- Media Platforms. *IEEE Access*, 12, 48436–48452. <https://doi.org/10.1109/ACCESS.2024.3382832>
- Jiang, X., Song, C., Xu, Y., Li, Y., & Peng, Y. (2022). Research on Sentiment Classification for Netizens Based on The BERT-BiLSTM-TextCNN Model. *PeerJ Computer Science*, 8, e1005. <https://doi.org/10.7717/peerj-cs.1005>
- Jurafsky, D., & Martin, J. H. (2026). *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition with Language Models*. Draft/Stanford University. <https://web.stanford.edu/~jurafsky/slp3/>
- Khasanah, I. N. (2021). Sentiment Classification Using fastText Embedding and Deep Learning Model. *Procedia Computer Science*, 189, 343–350. <https://doi.org/10.1016/j.procs.2021.05.103>
- Khurana, D., Koli, A., Khatter, K., & Singh, S. (2017). Natural Language Processing: State of The Art, Current Trends and Challenges. *Multimedia Tools and Applications*, 82(3), 3713–3744. <https://doi.org/10.1007/s11042-022-13428-4>
- Kumar, S., Roy, P. P., Dogra, D. P., & Kim, B.-G. (2023). A Comprehensive Review on Sentiment Analysis: Tasks, Approaches and Applications. *arXiv*. <https://doi.org/10.48550/arXiv.2311.11250>
- Li, H., Li, W., Zhao, J., Yu, P., & Huang, Y. (2023). A Sentiment Analysis Approach for Travel-Related Chinese Online Review Content. *PeerJ Computer Science*, 9, e1538. <https://doi.org/10.7717/peerj-cs.1538>
- Lipton, Z. C., Berkowitz, J., & Elkan, C. (2015). A Critical Review of Recurrent Neural Networks for Sequence Learning. *arXiv*. <https://doi.org/10.48550/arXiv.1506.00019>
- Loshchilov, I., & Hutter, F. (2019). Decoupled Weight Decay Regularization. *arXiv*. <https://doi.org/10.48550/arXiv.1711.05101>
- Mao, A., Mohri, M., & Zhong, Y. (2023). Cross-Entropy Loss Functions: Theoretical Analysis and Applications. *arXiv*. <https://doi.org/10.48550/arXiv.2304.07288>
- Matteucci, F., Arzamasov, V., & Boehm, K. (2023). A Benchmark of Categorical Encoders for Binary Classification. *arXiv*. <https://doi.org/10.48550/arXiv.2307.09191>
- Mifrah, S., & Benlahmar, E. H. (2022). Sentence-Level Sentiment Classification A Comparative Study Between Deep Learning Models. *Journal of ICT Standardization*, 10(2), 339–352. <https://doi.org/10.13052/jicts2245-800X.10213>
- Mortazavi, E., Tarvirdizadeh, B., Alipour, K., & Ghamari, M. (2024). Deep Learning Approaches for Assessing Pediatric Sleep Apnea Severity Through SpO2 Signals. *Scientific Reports*, 14(1), 22696. <https://doi.org/10.1038/s41598-024-67729-9>
- Nkhata, G., Gauch, S., Anjum, U., & Zhan, J. (2025). Fine-tuning BERT with Bidirectional LSTM for Fine-grained Movie Reviews Sentiment Analysis. *International Journal On Advances in Systems and Measurements*, 16(3). <https://doi.org/10.48550/arXiv.2502.20682>

- Palomino, M. A., & Aider, F. (2022). Evaluating the Effectiveness of Text Pre-Processing in Sentiment Analysis. *Applied Sciences*, 12(17), 8765. <https://doi.org/10.3390/APP12178765>
- Pang, B., & Lee, L. (2005). Seeing Stars: Exploiting Class Relationships for Sentiment Categorization with Respect to Rating Scales. *Proceedings of the 43rd Annual Meeting on Association for Computational Linguistics - ACL '05*, 115–124. <https://doi.org/10.3115/1219840.1219855>
- Peters, M. E., Neumann, M., Iyyer, M., Gardner, M., Clark, C., Lee, K., & Zettlemoyer, L. (2018). Deep Contextualized Word Representations. *NAACL HLT 2018 - 2018 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies - Proceedings of the Conference, 1*, 2227–2237. <https://doi.org/10.18653/V1/N18-1202>
- Powers, D. M. W. (2011). Evaluation: From Precision, Recall and F-measure to ROC, Informedness, Markedness and Correlation. *Journal of Machine Learning Technologies*, 2(1), 37–63. <https://doi.org/10.9735/2229-3981>
- Rahman, M. M., Shiplu, A. I., Watanobe, Y., & Alam, M. A. (2025). RoBERTa-BiLSTM: A Context-Aware Hybrid Model for Sentiment Analysis. *IEEE Transactions on Emerging Topics in Computational Intelligence*, 1–18. <https://doi.org/10.1109/TETCI.2025.3572150>
- Raschka, S. (2020). Model Evaluation, Model Selection, and Algorithm Selection in Machine Learning. *arXiv*. <http://arxiv.org/abs/1811.12808>
- Salehinejad, H., Sankar, S., Barfett, J., Colak, E., & Valaee, S. (2018). Recent Advances in Recurrent Neural Networks. *arXiv*. <https://doi.org/10.48550/arXiv.1801.01078>
- Semary, N. A., Ahmed, W., Amin, K., Pławiak, P., & Hammad, M. (2023). Improving Sentiment Classification Using a RoBERTa-based Hybrid Model. *Frontiers in Human Neuroscience*, 17. <https://doi.org/10.3389/fnhum.2023.1292010>
- Sennrich, R., Haddow, B., & Birch, A. (2016). Neural Machine Translation of Rare Words with Subword Units. *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, 1715–1725. <https://doi.org/10.18653/v1/P16-1162>
- Shad, R., Potter, K., & Gracias, A. (2024). Natural Language Processing (NLP) for Sentiment Analysis: A Comparative Study of Machine Learning Algorithms. *Dalam Preprints*. <https://doi.org/10.20944/preprints202410.2338.v1>
- Shen, Y., & Liu, J. (2021). Comparison of Text Sentiment Analysis Based on BERT and Word2Vec. *2021 IEEE 3rd International Conference on Frontiers Technology of Information and Computer (ICFTIC)*, 144–147. <https://doi.org/10.1109/ICFTIC54370.2021.9647258>
- Sherstinsky, A. (2020). Fundamentals of Recurrent Neural Network (RNN) and Long Short-Term Memory (LSTM) network. *Physica D: Nonlinear Phenomena*, 404, 132306. <https://doi.org/10.1016/j.physd.2019.132306>

- Sokolova, M., & Lapalme, G. (2009). A Systematic Analysis of Performance Measures for Classification Tasks. *Information Processing & Management*, 45(4), 427–437. <https://doi.org/10.1016/j.ipm.2009.03.002>
- Srivastava, N., Hinton, G., Krizhevsky, A., Sutskever, I., & Salakhutdinov, R. (2014). Dropout: A Simple Way to Prevent Neural Networks from Overfitting. *Journal of Machine Learning Research*, 15, 1929–1958. <https://doi.org/10.5555/2627435.2670313>
- Tabassum, A., & Patil, R. R. (2020). A Survey on Text Pre-Processing & Feature Extraction Techniques in Natural Language Processing. *International Research Journal of Engineering and Technology*, 07(06), 4864–4867.
- Talaat, A. S. (2023). Sentiment Analysis Classification System Using Hybrid BERT Models. *Journal of Big Data*, 10(1), 110. <https://doi.org/10.1186/s40537-023-00781-w>
- Uysal, A. K., & Gunal, S. (2014). The Impact of Preprocessing on Text Classification. *Information Processing & Management*, 50(1), 104–112. <https://doi.org/10.1016/j.ipm.2013.08.006>
- Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A. N., Kaiser, L., & Polosukhin, I. (2017). Attention Is All You Need. *Proceedings of the 31st International Conference on Neural Information Processing Systems*, 6000–6010. <https://doi.org/10.5555/3295222.3295349>
- Wang, F., Liu, G., Wang, Z., & Wu, X. (2021). Sentiment Analysis of Movie Reviews based on Pretraining and Dual Branch Coding. *2021 11th IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications (IDAACS)*, 1051–1055. <https://doi.org/10.1109/IDAACS53288.2021.9661049>
- Wibawa, A. P., Cahyani, D. E., Prasetya, D. D., Gumilar, L., & Nafalski, A. (2023). Detecting Emotions Using a Combination of Bidirectional Encoder Representations from Transformers Embedding and Bidirectional Long Short-Term Memory. *International Journal of Electrical and Computer Engineering (IJECE)*, 13(6), 7137. <https://doi.org/10.11591/ijece.v13i6.pp7137-7146>
- Wu, J., Chen, X. Y., Zhang, H., Xiong, L. D., Lei, H., & Deng, S. H. (2019). Hyperparameter Optimization for Machine Learning Models Based on Bayesian Optimization. *Journal of Electronic Science and Technology*, 17(1), 26–40. <https://doi.org/10.11989/JEST.1674-862X.80904120>
- Wu, Y., Schuster, M., Chen, Z., Le, Q. V., Norouzi, M., Macherey, W., Krikun, M., Cao, Y., Gao, Q., Macherey, K., Klingner, J., Shah, A., Johnson, M., Liu, X., Kaiser, L., Gouws, S., Kato, Y., Kudo, T., Kazawa, H., ... Dean, J. (2016). Google's Neural Machine Translation System: Bridging the Gap between Human and Machine Translation. *arXiv*. <https://doi.org/10.48550/arXiv.1609.08144>
- Yu, Y., Si, X., Hu, C., & Zhang, J. (2019). A Review of Recurrent Neural Networks: LSTM Cells and Network Architectures. *Neural Computation*, 31(7), 1235–1270. https://doi.org/10.1162/neco_a_01199

- Zha, Z., He, J., Zhen, L., Yu, M., Dong, C., Li, Z., Wu, G., Zuo, H., & Peng, K. (2024). A BiGRU Model Based on the DBO Algorithm for Cloud-Edge Communication Networks. *Applied Sciences*, 14(22), 10155. <https://doi.org/10.3390/app142210155>
- Zhang, A., Lipton, Z. C., Li, M., & Smola, A. J. (2023). *Dive Into Deep Learning*. Cambridge University Press. <http://arxiv.org/abs/2106.11342>
- Zhang, L., Wang, S., & Liu, B. (2018). Deep Learning for Sentiment Analysis : A Survey. *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery*, 8(4), e1253. <https://doi.org/10.1002/widm.1253>
- Zhang, Y., & Chen, X. (2020). Explainable Recommendation: A Survey and New Perspectives. *Foundations and Trends® in Information Retrieval*, 14(1), 1–101. <https://doi.org/10.1561/15000000066>
- Zhou, L., & Bian, X. (2019). Improved Text Sentiment Classification Method Based on BiGRU-Attention. *Journal of Physics: Conference Series*, 1345(3), 032097. <https://doi.org/10.1088/1742-6596/1345/3/032097>
- Zhou, P., Qi, Z., Zheng, S., Xu, J., Bao, H., & Xu, B. (2016). Text Classification Improved by Integrating Bidirectional LSTM with Two-dimensional Max Pooling. *Proceedings of COLING 2016, the 26th International Conference on Computational Linguistics: Technical Papers*, 3485–3495. <http://arxiv.org/abs/1611.06639>