REFERENCES

Afaq, S., & Rao, S. (2020). Significance Of Epochs On Training A Neural Network. *International Journal of Scientific & Technology Research*, *9*, 485–488.

Alamsyah, A., & Adityawarman, F. (2017). Hybrid sentiment and network analysis of social opinion polarization. *2017 5th International Conference on Information and Communication Technology (ICoICT)*, 1–6. https://doi.org/10.1109/ICoICT.2017.8074650

Aleksandric, A., Roy, S. S., & Nilizadeh, S. (2022). *Twitter Users' Behavioral Response to Toxic Replies*.

Aroyo, L., Dixon, L., Thain, N., Redfield, O., & Rosen, R. (2019). Crowdsourcing Subjective Tasks: The Case Study of Understanding Toxicity in Online Discussions. *Companion Proceedings of The 2019 World Wide Web Conference*, 1100–1105. https://doi.org/10.1145/3308560.3317083

Berger, A., & Guda, S. (2020). Threshold optimization for F measure of macro-averaged precision and recall. *Pattern Recognition*, *102*, 107250. https://doi.org/10.1016/j.patcog.2020.107250

Bostrom, K., & Durrett, G. (2020). Byte Pair Encoding is Suboptimal for Language Model Pretraining. *Findings of the Association for Computational Linguistics: EMNLP 2020*, 4617–4624. https://doi.org/10.18653/v1/2020.findings-emnlp.414

Bouschery, S. G., Blazevic, V., & Piller, F. T. (2023). Augmenting human innovation teams with artificial intelligence: Exploring transformer-based language models. *Journal of Product Innovation Management*, *40*(2), 139–153. https://doi.org/10.1111/jpim.12656

Devlin, J., Chang, M.-W., Lee, K., & Toutanova, K. (2019). BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding. *Proceedings of the 2019 Conference of the North*, 4171–4186. https://doi.org/10.18653/v1/N19-1423

Dong, H., Zhu, B., & Zhang, J. (2020). A Cost-sensitive Active Learning for Imbalance Data with Uncertainty and Diversity Combination. *Proceedings of the 2020 12th International Conference on Machine Learning and Computing*, 218–224. https://doi.org/10.1145/3383972.3384002

Dudija, N., Natalia, L., Alamsyah, A., & Romadhony, A. (2022). Identification of Extraversion and Neuroticism Personality Dimensions Using IndoBERT's Deep Learning Model. *2022 IEEE International Conference on Industry 4.0, Artificial Intelligence, and Communications Technology (IAICT)*, 155–159. https://doi.org/10.1109/IAICT55358.2022.9887476

flax-community. (n.d.). *flax-community/indonesian-roberta-base · Hugging Face*. Https://Huggingface.Co/Flax-Community/Indonesian-Roberta-Base.

Gao, S., Kotevska, O., Sorokine, A., & Christian, J. B. (2021). A pre-training and self-training approach for biomedical named entity recognition. *PLOS ONE*, *16*(2), e0246310. https://doi.org/10.1371/journal.pone.0246310

Haghighian Roudsari, A., Afshar, J., Lee, W., & Lee, S. (2022). PatentNet: multi-label classification of patent documents using deep learning based language understanding. *Scientometrics*, *127*(1), 207–231. https://doi.org/10.1007/s11192-021-04179-4

Hana, K. M., Adiwijaya, Faraby, S. Al, & Bramantoro, A. (2020). Multi-label Classification of Indonesian Hate Speech on Twitter Using Support Vector Machines. *2020 International Conference on Data Science and Its Applications (ICoDSA)*, 1–7. https://doi.org/10.1109/ICoDSA50139.2020.9212992

Hassani, H., Beneki, C., Unger, S., Mazinani, M. T., & Yeganegi, M. R. (2020). Text Mining in Big Data Analytics. *Big Data and Cognitive Computing*, *4*(1), 1. https://doi.org/10.3390/bdcc4010001

Hauser, F., Hautz, J., Hutter, K., & Füller, J. (2017). Firestorms: Modeling conflict diffusion and management strategies in online communities. *The Journal of Strategic Information Systems*, *26*(4), 285–321. https://doi.org/10.1016/j.jsis.2017.01.002

Hosseini, H., Kannan, S., Zhang, B., & Poovendran, R. (2017). *Deceiving Google's Perspective API Built for Detecting Toxic Comments*.

Kemp, S. (2022, February 15). *DIGITAL 2022: INDONESIA*. Https://Datareportal.Com/Reports/Digital-2022-Indonesia.

Kermani, H., & Adham, M. (2021). Mapping Persian Twitter: Networks and mechanism of political communication in Iranian 2017 presidential election. *Big Data & Society*, *8*(1), 205395172110255. https://doi.org/10.1177/20539517211025568

Kim, J., & Jeong, O.-R. (2021). Mirroring Vector Space Embedding for New Words. *IEEE Access*, *9*, 99954–99967. https://doi.org/10.1109/ACCESS.2021.3096238

Koto, F., Lau, J. H., & Baldwin, T. (2021). IndoBERTweet: A Pretrained Language Model for Indonesian Twitter with Effective Domain-Specific Vocabulary Initialization. *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*, 10660–10668. https://doi.org/10.18653/v1/2021.emnlp-main.833

Krstinić, D., Braović, M., Šerić, L., & Božić-Štulić, D. (2020). Multi-label Classifier Performance Evaluation with Confusion Matrix. *Computer Science & Information Technology*, 01–14. https://doi.org/10.5121/csit.2020.100801

Liu, J., Xia, C., Li, X., Yan, H., & Liu, T. (2020). A BERT-based Ensemble Model for Chinese News Topic Prediction. *Proceedings of the 2020 2nd International Conference on Big Data Engineering*, 18–23. https://doi.org/10.1145/3404512.3404524

Liu, Y., Ott, M., Goyal, N., Du, J., Joshi, M., Chen, D., Levy, O., Lewis, M., Zettlemoyer, L., & Stoyanov, V. (2019). *RoBERTa: A Robustly Optimized BERT Pretraining Approach*. arXiv. https://doi.org/10.48550/ARXIV.1907.11692

Mao, Y., Tu, Z., Xi, F., Wang, Q., & Xu, S. (2021). TAPP: DNN Training for Task Allocation through Pipeline Parallelism Based on Distributed Deep Reinforcement Learning. *Applied Sciences*, *11*(11), 4785. https://doi.org/10.3390/app11114785

Marcoux, T., Obadimu, A., & Agarwal, N. (2020). *Dynamics of Online Toxicity in the Asia-Pacific Region* (pp. 80–87). https://doi.org/10.1007/978-3-030-60470-7_9

Nabiilah, G. Z., Prasetyo, S. Y., Izdihar, Z. N., & Girsang, A. S. (2023). BERT base model for toxic comment analysis on Indonesian social media. *Procedia Computer Science*, *216*, 714–721. https://doi.org/10.1016/j.procs.2022.12.188

Nugroho, K. S., Sukmadewa, A. Y., DW, H. W., Bachtiar, F. A., & Yudistira, N. (2021). *BERT Fine-Tuning for Sentiment Analysis on Indonesian Mobile Apps Reviews*. https://doi.org/10.1145/3479645.3479679

Pereira, R. B., Plastino, A., Zadrozny, B., & Merschmann, L. H. C. (2018). Correlation analysis of performance measures for multi-label classification. *Information Processing & Management*, *54*(3), 359–369. https://doi.org/10.1016/j.ipm.2018.01.002

Pillai, I., Fumera, G., & Roli, F. (2017). Designing multi-label classifiers that maximize F measures: State of the art. *Pattern Recognition*, *61*, 394–404. https://doi.org/10.1016/j.patcog.2016.08.008

Pimpalkar, A. P., & Retna Raj, R. J. (2020). Influence of Pre-Processing Strategies on the Performance of ML Classifiers Exploiting TF-IDF and BOW Features. *ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal*, *9*(2), 49–68. https://doi.org/10.14201/ADCAIJ2020924968

Plaza-del-Arco, F. M., Molina-González, M. D., Ureña-López, L. A., & Martín-Valdivia, M. T. (2021). Comparing pre-trained language models for Spanish hate speech detection. *Expert Systems with Applications*, *166*, 114120. https://doi.org/10.1016/j.eswa.2020.114120

Rahmawati, A., Alamsyah, A., & Romadhony, A. (2022). Hoax News Detection Analysis using IndoBERT Deep Learning Methodology. *2022 10th International Conference on Information and Communication Technology (ICoICT)*, 368–373. https://doi.org/10.1109/ICoICT55009.2022.9914902

Ramadhani, D. P., Setiawan, I. P. S., & Alamsyah, A. (2022). The Mobility, Sentiment and Problems Identification Analysis in Tourism Industry using Social Media

Data. *2022 10th International Conference on Information and Communication Technology (ICoICT)*, 310–315. https://doi.org/10.1109/ICoICT55009.2022.9914859

Rivaldo. (2021, March 4). *Preprocessing the Indonesian Twitter Toxic Comment*. Kaggle.

Rivaldo, R., Amalia, A., & Gunawan, D. (2021). Multilabeling Indonesian Toxic Comments Classification Using The Bidirectional Encoder Representations of Transformers Model. *2021 International Conference on Data Science, Artificial Intelligence, and Business Analytics (DATABIA)*, 22–26. https://doi.org/10.1109/DATABIA53375.2021.9650126

Salawu, S., Lumsden, J., & He, Y. (2021). A Large-Scale English Multi-Label Twitter Dataset for Cyberbullying and Online Abuse Detection. *Proceedings of the 5th Workshop on Online Abuse and Harms (WOAH 2021)*, 146–156. https://doi.org/10.18653/v1/2021.woah-1.16

Salminen, J., Sengün, S., Corporan, J., Jung, S., & Jansen, B. J. (2020). Topic-driven toxicity: Exploring the relationship between online toxicity and news topics. *PLOS ONE*, *15*(2), e0228723. https://doi.org/10.1371/journal.pone.0228723

Tabinda Kokab, S., Asghar, S., & Naz, S. (2022). Transformer-based deep learning models for the sentiment analysis of social media data. *Array*, *14*, 100157. https://doi.org/10.1016/j.array.2022.100157

Tenney, I., Das, D., & Pavlick, E. (2019). *BERT Rediscovers the Classical NLP Pipeline*.

Thapa, C., Jang, S. I., Ahmed, M. E., Camtepe, S., Pieprzyk, J., & Nepal, S. (2022). Transformer-Based Language Models for Software Vulnerability Detection. *Proceedings of the 38th Annual Computer Security Applications Conference*, 481–496. https://doi.org/10.1145/3564625.3567985

Topal, M. O., Bas, A., & van Heerden, I. (2021). *Exploring Transformers in Natural Language Generation: GPT, BERT, and XLNet*.

Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A. N., Kaiser, L., & Polosukhin, I. (2017). *Attention Is All You Need*.

Wilie, B., Vincentio, K., Winata, G. I., Cahyawijaya, S., Li, X., Lim, Z. Y., Soleman, S., Mahendra, R., Fung, P., Bahar, S., & Purwarianti, A. (2020). IndoNLU: Benchmark and Resources for Evaluating Indonesian Natural Language Understanding. *Proceedings of the 1st Conference of the Asia-Pacific Chapter of the Association for Computational Linguistics and the 10th International Joint Conference on Natural Language Processing*, 843–857. https://aclanthology.org/2020.aacl-main.85

Yan, X., Xu, Y., Xing, X., Cui, B., Guo, Z., & Guo, T. (2020). Trustworthy Network Anomaly Detection Based on an Adaptive Learning Rate and Momentum in IIoT. *IEEE Transactions on Industrial Informatics, 16*(9), 6182–6192. https://doi.org/10.1109/TII.2020.2975227