

**DAFTAR PUSTAKA**

- [1] Indonesia, Kementerian Kesehatan, “Peraturan menteri kesehatan nomor 24 tahun 2022 tentang rekam medis,” Aug. 2022, bN.2022/No.829, peraturan.go.id: 19 hlm.
- [2] D. Rizky and A. Tiorentap, “Evaluasi manfaat penerapan rekam medis elektronik di negara berkembang: Systematic literature review,” *Indonesian of Health Information Management Journal (INOHIM)*, vol. 8, pp. 69–79, 12 2020. [Online]. Available: <https://inohim.esaunggul.ac.id/index.php/INO/article/view/218>
- [3] L. Heryawan, F. Febriansyah, and A. Bukhori, “Deep learning and machine learning model comparison for diagnosis detection from medical records,” in *Proceedings of the 2022 International Conference on Computer, Control, Informatics and Its Applications*, ser. IC3INA ’22. New York, NY, USA: Association for Computing Machinery, 2023, p. 306–310. [Online]. Available: <https://doi.org/10.1145/3575882.3575941>
- [4] S. C. Budi, “Manajemen unit kerja rekam medis,” *Yogyakarta: Quantum Sinergis Media*, vol. 96, 2011.
- [5] P. Parjono and S. Kusumadewi, “Pemodelan text mining dalam pengkodean penyakit pasien berdasar kode icd 10,” *Jurnal Nasional Teknologi dan Sistem Informasi*, vol. 9, pp. 200–207, 09 2023.
- [6] V. Alonso, J. V. Santos, M. Pinto, J. Ferreira, I. Lema, F. Lopes, and A. Freitas, “Problems and barriers in the transition to icd-10-cm/pcs: A qualitative study of medical coders’ perceptions,” in *New Knowledge in Information Systems and Technologies*, Á. Rocha, H. Adeli, L. P. Reis, and S. Costanzo, Eds. Cham: Springer International Publishing, 2019, pp. 72–82.
- [7] World Health Organization, “Mental disorders: Key facts,” <https://www.who.int/news-room/fact-sheets/detail/mental-disorders>, 2022, accessed: 2023-10-02.
- [8] M. Cavanaugh, “6 challenges for mental health providers using icd-10,” *Psychiatric Times*, 2015. [Online]. Available: <https://www.psychiatrictimes.com/view/6-challenges-mental-health-providers-using-icd-10>
- [9] K. Slater, A. Karwath, J. A. Williams, S. Russell, S. Makepeace, A. Carberry, R. Hoehndorf, and G. V. Gkoutos, “Towards similarity-based differential diagnostics for common diseases,” *Computers in Biology and Medicine*, vol. 133, p. 104360, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0010482521001542>
- [10] P. Melville, W. Gryc, and R. D. Lawrence, “Sentiment analysis of blogs by combining lexical knowledge with text classification,” ser. KDD ’09. New York, NY, USA: Association for Computing Machinery, 2009, p. 1275–1284. [Online]. Available: <https://doi.org/10.1145/1557019.1557156>
- [11] L. Yang, E. M. Kenny, T. L. J. Ng, Y. Yang, B. Smyth, and R. Dong, “Generating plausible counterfactual explanations for deep transformers in financial text classification,” 2020. [Online]. Available: <https://arxiv.org/abs/2010.12512>



- [12] X. Diao, Y. Huo, S. Zhao, J. Yuan, M. Cui, Y. Wang, X. Lian, and W. Zhao, "Automated icd coding for primary diagnosis via clinically interpretable machine learning," *International Journal of Medical Informatics*, vol. 153, p. 104543, 2021. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1386505621001696>
- [13] K. Xu, M. Lam, J. Pang, X. Gao, C. Band, P. Mathur, F. Papay, A. K. Khanna, J. B. Cywinski, K. Maheshwari, P. Xie, and E. Xing, "Multimodal machine learning for automated icd coding," 2022. [Online]. Available: <https://arxiv.org/abs/1810.13348>
- [14] J. H. B. Masud, C.-C. Kuo, C.-Y. Yeh, H.-C. Yang, and M.-C. Lin, "Applying deep learning model to predict diagnosis code of medical records," *Diagnostics*, vol. 13, no. 13, 2023. [Online]. Available: <https://www.mdpi.com/2075-4418/13/13/2297>
- [15] D. I. F. Argana, "Perbandingan bidirectional dan attention mechanism dalam klasifikasi multilabel untuk mengekstraksi data diagnosis dari catatan medis," 2023.
- [16] V. Mayya, S. S. Kamath, and V. Sugumaran, " $\mathcal{LAT}\mathcal{A}$ — label attention transformer architectures for icd-10 coding of unstructured clinical notes," in *2021 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)*, 2021, pp. 1–7.
- [17] C.-W. Huang, S.-C. Tsai, and Y.-N. Chen, "PLM-ICD: Automatic ICD coding with pretrained language models," in *Proceedings of the 4th Clinical Natural Language Processing Workshop*, T. Naumann, S. Bethard, K. Roberts, and A. Rumshisky, Eds. Seattle, WA: Association for Computational Linguistics, Jul. 2022, pp. 10–20. [Online]. Available: <https://aclanthology.org/2022.clinicalnlp-1.2>
- [18] L. Liu, O. Perez-Concha, A. Nguyen, V. Bennett, and L. Jorm, "Automated icd coding using extreme multi-label long text transformer-based models," *Artificial Intelligence in Medicine*, vol. 144, p. 102662, 2023. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0933365723001768>
- [19] A. Vaswani, N. Shazeer, N. Parmar, J. Uszkoreit, L. Jones, A. N. Gomez, L. Kaiser, and I. Polosukhin, "Attention is all you need," in *Proceedings of the 31st International Conference on Neural Information Processing Systems*, ser. NIPS'17. Red Hook, NY, USA: Curran Associates Inc., 2017, p. 6000–6010.
- [20] J. Devlin, M.-W. Chang, K. Lee, and K. Toutanova, "BERT: Pre-training of deep bidirectional transformers for language understanding," in *Proceedings of the 2019 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Volume 1 (Long and Short Papers)*, J. Burstein, C. Doran, and T. Solorio, Eds. Minneapolis, Minnesota: Association for Computational Linguistics, Jun. 2019, pp. 4171–4186. [Online]. Available: <https://aclanthology.org/N19-1423>
- [21] A. Coenen, E. Reif, A. Yuan, B. Kim, A. Pearce, F. Viégas, and M. Wattenberg, *Visualizing and measuring the geometry of BERT*. Red Hook, NY, USA: Curran Associates Inc., 2019.



- [22] V. Sanh, L. Debut, J. Chaumond, and T. Wolf, “Distilbert, a distilled version of bert: smaller, faster, cheaper and lighter,” 2020. [Online]. Available: <https://arxiv.org/abs/1910.01108>
- [23] B. Wilie, K. Vincentio, G. I. Winata, S. Cahyawijaya, X. Li, Z. Y. Lim, S. Soleman, R. Mahendra, P. Fung, S. Bahar, and A. Purwarianti, “IndoNLU: Benchmark and resources for evaluating Indonesian natural language understanding,” in *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*, K.-F. Wong, K. Knight, and H. Wu, Eds. Suzhou, China: Association for Computational Linguistics, Dec. 2020, pp. 843–857. [Online]. Available: <https://aclanthology.org/2020.aacl-main.85>
- [24] B. Biswas, T.-H. Pham, and P. Zhang, “Transicd: Transformer based code-wise attention model for explainable icd coding,” 03 2021.
- [25] T. Vu, D. Q. Nguyen, and A. Nguyen, “A label attention model for icd coding from clinical text,” in *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence*, ser. IJCAI-PRICAI-2020. International Joint Conferences on Artificial Intelligence Organization, Jul. 2020, p. 3335–3341. [Online]. Available: <http://dx.doi.org/10.24963/ijcai.2020/461>
- [26] Z. A. Amin, W. Cholil, M. I. Herdiansyah, and E. S. Negara, “Electronic medical record analysis to determine medical diagnosis in chapter icd 10 category using machine learning,” *POSITIF : Jurnal Sistem dan Teknologi Informasi*, vol. 7, pp. 127–132, 12 2021. [Online]. Available: <https://ejurnal.poliban.ac.id/index.php/Positif/article/view/1140>
- [27] J. Mullenbach, S. Wiegreffe, J. Duke, J. Sun, and J. Eisenstein, “Explainable prediction of medical codes from clinical text,” 01 2018, pp. 1101–1111.
- [28] T. Zhou, P. Cao, Y. Chen, K. Liu, J. Zhao, K. Niu, W. Chong, and S. Liu, “Automatic ICD coding via interactive shared representation networks with self-distillation mechanism,” in *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (Volume 1: Long Papers)*, C. Zong, F. Xia, W. Li, and R. Navigli, Eds. Online: Association for Computational Linguistics, Aug. 2021, pp. 5948–5957. [Online]. Available: <https://aclanthology.org/2021.acl-long.463>
- [29] V. Mayya, S. S. Kamath, and V. Sugumaran, “ $\mathcal{LAT}\mathcal{A}$ – label attention transformer architectures for icd-10 coding of unstructured clinical notes,” in *2021 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB)*, 2021, pp. 1–7.
- [30] J. Lee, D. Scott, M. Villarroel, G. Clifford, M. Saeed, and R. Mark, “Open-access mimic-ii database for intensive care research,” in *Annu Int Conf IEEE Eng Med Biol Soc*, 2011, pp. 8315–8318.
- [31] A. E. Johnson, T. J. Pollard, L. Shen, L. wei H. Lehman, M. Feng, M. Ghassemi, B. Moody, P. Szolovits, L. A. Celi, and R. G. Mark, “Mimic-iii, a freely accessible critical care database,” *Scientific Data*, vol. 3, no. 1, p. 160035, May 2016. [Online]. Available: <https://doi.org/10.1038/sdata.2016.35>



- [32] J. Lyons, *Linguistic Semantics: An Introduction*. Cambridge University Press, 1995.
- [33] J. I. Saeed, *Semantics*, 2nd ed. Wiley-Blackwell, 2003.
- [34] H. Kridalaksana, *Kamus Linguistik*. Gramedia Pustaka Utama, 2001.
- [35] D. Jurafsky and J. H. Martin, “Speech and language processing: An introduction to natural language processing, computational linguistics, and speech recognition,” 2000. [Online]. Available: <https://api.semanticscholar.org/CorpusID:267853058>
- [36] C. D. Manning and H. Schütze, *Foundations of Statistical Natural Language Processing*. Cambridge, MA: MIT Press, 1999.
- [37] T. M. Mitchell, *Machine Learning*. New York: McGraw-Hill, 1997.
- [38] S. Russell and P. Norvig, *Artificial Intelligence: A Modern Approach*, 4th ed. New York: Pearson, 2020.
- [39] C. M. Bishop, *Pattern Recognition and Machine Learning*. New York: Springer, 2006.
- [40] T. Hastie, R. Tibshirani, and J. Friedman, *The Elements of Statistical Learning: Data Mining, Inference, and Prediction*, 2nd ed. New York: Springer, 2009.
- [41] R. S. Sutton and A. G. Barto, *Reinforcement Learning: An Introduction*, 2nd ed. Cambridge, MA: MIT Press, 2018.
- [42] S. Haykin, *Neural Networks: A Comprehensive Foundation*, 1st ed. USA: Prentice Hall PTR, 1994.
- [43] I. Goodfellow, Y. Bengio, and A. Courville, *Deep Learning*. MIT Press, 2016, <http://www.deeplearningbook.org>.
- [44] Y. LeCun, Y. Bengio, and G. Hinton, “Deep learning,” *Nature*, vol. 521, pp. 436–44, 05 2015.
- [45] C. A. L. Bailer-Jones, R. Gupta, and H. P. Singh, “An introduction to artificial neural networks,” 2001.
- [46] D. Jurafsky and J. H. Martin, *Speech and Language Processing*. Prentice Hall, 2018.
- [47] A. Stolcke, “Srilm - an extensible language modeling toolkit,” in *Proceedings of the 7th International Conference on Spoken Language Processing*. ISCA, 2002, pp. 901–904.
- [48] T. Brown, B. Mann, N. Ryder, M. Subbiah, J. Kaplan, P. Dhariwal, A. Neelakantan, P. Shyam, G. Sastry, A. Askell *et al.*, “Language models are few-shot learners,” *Advances in Neural Information Processing Systems*, vol. 33, pp. 1877–1901, 2020.
- [49] A. Radford, J. Wu, R. Child, D. Luan, D. Amodei, and I. Sutskever, “Language models are unsupervised multitask learners,” *OpenAI Blog*, 2019.



- [51] J. Alammar, “The illustrated transformer,” *The Illustrated Transformer—Jay Alammar—Visualizing Machine Learning One Concept at a Time*, vol. 27, 2018.
- [52] L. Ambalina. (2020, October) Essential guide to transformer models in machine learning. [Online; accessed 2024-09-08]. [Online]. Available: <https://hackernoon.com/essential-guide-to-transformer-models-in-machine-learning-dzz3tk8>
- [53] W. H. Organization, *International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)*. Geneva: World Health Organization, 1992.
- [54] J. A. Hirsch, T. M. Leslie-Mazwi, G. N. Nicola, and et al., “Icd-10: History and context,” *American Journal of Neuroradiology*, vol. 36, no. 5, pp. 868–870, 2015.
- [55] P. Mahapatra, K. Shibuya, A. D. Lopez, and et al., “Civil registration systems and vital statistics: successes and missed opportunities,” *The Lancet*, vol. 370, no. 9599, pp. 1653–1663, 2007.
- [56] G. M. Reed, M. B. First, C. S. Kogan, S. E. Hyman, O. Gureje, W. Gaebel, M. Maj, D. J. Stein, A. Maercker, P. Tyrer, A. Claudino, E. Garralda, L. Salvador-Carulla, R. Ray, J. B. Saunders, T. Dua, V. Poznyak, M. E. Medina-Mora, K. M. Pike, J. L. Ayuso-Mateos, and S. Saxena, “Innovations and changes in the icd-11 classification of mental, behavioural and neurodevelopmental disorders,” *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, vol. 18, no. 1, pp. 3–19, 2019.
- [57] C. for Medicare & Medicaid Services, “Icd-10-cm/pcs implementation by medicare and medicaid,” Available from CMS.gov, 2014.
- [58] R. Lozano, M. Naghavi, K. Foreman, and et al., “Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the global burden of disease study 2010,” *The Lancet*, vol. 380, no. 9859, pp. 2095–2128, 2012.
- [59] T. B. Ustun, S. Chatterji, J. Bickenbach, and et al., “The international classification of functioning, disability, and health: A new tool for understanding disability and health,” *Disability and Rehabilitation*, vol. 25, no. 11-12, pp. 565–571, 2003.
- [60] O. Dekel and O. Shamir, “Multiclass-multilabel classification with more classes than examples,” in *International Conference on Artificial Intelligence and Statistics*, 2010. [Online]. Available: <https://api.semanticscholar.org/CorpusID:1952250>
- [61] Kainat, “Multi-label classification,” *Medium*, Feb 2023, accessed: Sep. 25, 2024. [Online]. Available: <https://medium.com/@kitkat73275/multi-label-classification-8d8ae55e8373>
- [62] A. Fujino, H. Isozaki, and J. Suzuki, “Multi-label text categorization with model combination based on f1-score maximization,” 01 2008.



- [63] G. Bénédict, H. V. Koops, D. Odijk, and M. de Rijke, “sigmoidf1: A smooth f1 score surrogate loss for multilabel classification,” *Transactions on Machine Learning Research*, 2022. [Online]. Available: <https://openreview.net/forum?id=gvSHaaD2wQ>
- [64] Arize AI. (n.d.) Understanding and applying f1 score: Ai evaluation essentials with hands-on coding example. [Online]. Available: <https://arize.com/blog-course/understanding-and-applying-f1-score/>
- [65] I. Masoud, “Understanding micro, macro, and weighted averages for scikit-learn metrics in multi-class classification with example,” *Towards Data Science*, May 2022.
- [66] R. Manorathna, “k-fold cross-validation explained in plain english (for evaluating a model’s performance and hyperparameter tuning),” 12 2020.
- [67] [Online]. Available: https://scikit-learn.org/stable/modules/cross_validation.html
- [68] Unknown, “Properly setting the random seed in ml experiments,” *Open Data Science*, 2021. [Online]. Available: <https://opendatascience.com/properly-setting-the-random-seed-in-ml-experiments/>
- [69] ——, “Variability in neural network training,” *Artificial Intelligence Review*, 2020. [Online]. Available: <https://link.springer.com/article/10.1007/s10462-020-09822-1>
- [70] Cahya, “Indonesian distilbert base model (uncased),” <https://huggingface.co/cahya/distilbert-base-indonesian>, 2021, accessed: 2024-09-27.