

## DAFTAR PUSTAKA

- Abiodun, O.I., Jantan, A., Omolara, A.E., Dada, K.V., Umar, A.M., Linus, O.U., Arshad, H., Kazaure, A.A., Gana, U., & Kiru, M.U. (2019). Comprehensive review of artificial neural network applications to pattern recognition. *IEEE access*, 7, pp.158820-158846.
- Agatonovic-Kustrin, S., & Beresford, R. (2000). Basic concepts of artificial neural network (ANN) modeling and its application in pharmaceutical research. *Journal of pharmaceutical and biomedical analysis*, 22(5), pp.717-727.
- Ammon, C. J., Velasco, A.A., Lay, T. & Wallace, T.C. (2021). *Foundations of Modern Global Seismology*, 2nd Edition, Academic Press, United Kingdom.
- BPPTKG. (2016). Karakteristik Gunung Merapi,. Diakses dari <https://bpptkg.esdm.go.id/pub/page.php?idf=9>
- Bi, Q., Goodman, K. E., Kaminsky, J., & Lessler, J. (2019). What is machine learning? A primer for the epidemiologist. *American journal of epidemiology*, 188(12), 2222-2239.
- Budi-Santoso, A., Lesage, P., Dwiyono, S., Sumarti, S., Jousset, P., & Metaxian, J. P. (2013). Analysis of the seismic activity associated with the 2010 eruption of Merapi Volcano, Java. *Journal of Volcanology and Geothermal Research*, 261, 153-170.
- Budi-Santoso, A., Beauducel, F., Nandaka, I. G. M. A., Humaida, H., Costa, F., Widiwijayanti, C., ... & Dahamna, N. (2023). The Merapi volcano monitoring system. In *Merapi Volcano: geology, eruptive activity, and monitoring of a high-risk volcano* (pp. 409-436). Cham: Springer International Publishing.
- Bullen, K. E., & Bolt, B. A. (1985). *An introduction to the theory of seismology*. Cambridge university press.
- Canario, J. P., Mello, R., Curilem, M., Huenupan, F., & Rios, R. (2020). In-depth comparison of deep artificial neural network architectures on seismic events classification. *Journal of Volcanology and Geothermal Research*, 401, 106881.
- Carleo, G., Cirac, I., Cranmer, K., Daudet, L., Schuld, M., Tishby, N., ... & Zdeborová, L. (2019). Machine learning and the physical sciences. *Reviews of Modern Physics*, 91(4), 045002.
- Chiang, C. L. (2003). *Statistical methods of analysis*. World Scientific.

- Cochran, W. T., Cooley, J. W., Favin, D. L., Helms, H. D., Kaenel, R. A., Lang, W. W., ... & Welch, P. D. (1967). What is the fast Fourier transform?. *Proceedings of the IEEE*, 55(10), 1664-1674.
- Cooley, J. W., Lewis, P. A., & Welch, P. D. (1969). The fast Fourier transform and its applications. *IEEE Transactions on Education*, 12(1), 27-34.
- Dicoding. (2023). Python: Pengertian, Contoh Penggunaan, dan Manfaat Mempelajarinya. Diakses dari <https://www.dicoding.com/blog/python-pengertian-contoh-penggunaan-dan-manfaat-mempelajarinya/>
- Espinosa-Ortega, T., Budi-Santoso, A., Win, N. T. Z., Widiwijayanti, C., & Costa, F. (2022). Probabilistic analysis to correlate seismic data with lava extrusion phases at Merapi volcano (Indonesia). *Journal of Volcanology and Geothermal Research*, 426, 107537.
- ESDM. (2018). Mengenal Merapi Lebih Dekat: Merapi Dulu dan Kini. Diakses dari <https://www.esdm.go.id/id/media-center/arsip-berita/mengenal-merapi-lebih-dekat-merapi-dulu-dan-kini#:~:text=Karena%20Merapi%20merupakan%20gunung%20dengan%20karakter%20dan%20tipe,bisa%20ditebak%20antara%202%2C5%20sampai%204%20tahun%20sekali.>
- Falcin, A., Métaixian, J. P., Mars, J., Stutzmann, É., Komorowski, J. C., Moretti, R., ... & Lemarchand, A. (2021). A machine-learning approach for automatic classification of volcanic seismicity at La Soufrière Volcano, Guadeloupe. *Journal of Volcanology and Geothermal Research*, 411, 107151.
- Fernández, A., Garcia, S., Herrera, F., & Chawla, N. V. (2018). SMOTE for learning from imbalanced data: progress and challenges, marking the 15-year anniversary. *Journal of artificial intelligence research*, 61, 863-905.
- Gertisser, R., Charbonnier, S. J., Keller, J., & Quidelleur, X. (2012). The geological evolution of Merapi volcano, central Java, Indonesia. *Bulletin of Volcanology*, 74, 1213-1233.
- Gertisser, R., Troll, V. R., Walter, T. R., & Gusti Made Agung Nandaka, I. (2023). Merapi Volcano, Geology, Eruptive Activity, and Monitoring of a High-Risk Volcano. Springer. <https://doi.org/10.1007/978-3-031-15040-1>
- Giacco, F., Esposito, A. M., Scarpetta, S., Giudicepietro, F., & Marinaro, M. (2009). Support vector machines and MLP for automatic classification of seismic signals at Stromboli volcano. In *Neural Nets WIRN09* (pp. 116-123). IOS Press.
- Hariyono, E., & Liliyasi, S. (2018). The characteristics of volcanic eruption in Indonesia. *Volcanoes: Geological and Geophysical Setting, Theoretical*

*Aspects and Numerical Modeling, Applications to Industry and Their Impact on the Human Health, 73.*

- Hidayat, D., Chouet, B., Voight, B., Dawson, P., & Ratdomopurbo, A. (2002). Source mechanism of very-long-period signals accompanying dome growth activity at Merapi volcano, Indonesia. *Geophysical research letters*, 29(23), 33-1.
- Hibert, C., Provost, F., Malet, J. P., Maggi, A., Stumpf, A., & Ferrazzini, V. (2017). Automatic identification of rockfalls and volcano-tectonic earthquakes at the Piton de la Fournaise volcano using a Random Forest algorithm. *Journal of Volcanology and Geothermal Research*, 340, 130-142.
- Iguchi, M., Nakamichi, H., Miyamoto, K., Shimomura, M., Nandaka, I. G. M. A., Budi-Santoso, A., & Aisyah, N. (2019). Forecast of the pyroclastic volume by precursory seismicity of Merapi volcano. *Journal of Disaster Research*, 14(1), 51-60.
- Jabbar, H., & Khan, R. Z. (2015). Methods to avoid over-fitting and under-fitting in supervised machine learning (comparative study). *Computer Science, Communication and Instrumentation Devices*, 70(10.3850), 978-981.
- Jordan, M. I., & Mitchell, T. M. (2015). Machine learning: Trends, perspectives, and prospects. *Science*, 349(6245), 255-260.
- Khalilov, D. A., Jumaboyeva, N. A. K., & Kurbonova, T. M. K. (2021). Advantages and Applications of Neural Networks. *Academic research in educational sciences*, 2(2), 1153-1159.
- Langer, H., Falsaperla, S., Powell, T., & Thompson, G. (2006). Automatic classification and a-posteriori analysis of seismic event identification at Soufrière Hills volcano, Montserrat. *Journal of volcanology and geothermal research*, 153(1-2), 1-10.
- Lomax, A., & Michelini, A. (2009). Mw<sub>pd</sub>: a duration–amplitude procedure for rapid determination of earthquake magnitude and tsunamigenic potential from P waveforms. *Geophysical Journal International*, 176(1), 200-214.
- MAGMA Indonesia. (2019). Karakteristik Gunung Merapi. Diakses dari <https://magma.esdm.go.id/v1/gunung-api/laporan/search/q?code=MER&start=2019-10-01&end=2019-10-31>.
- Mahesh, B. (2020). Machine learning algorithms-a review. *International Journal of Science and Research (IJSR).[Internet]*, 9(1), 381-386.
- Malfante, M., Dalla Mura, M., Mars, J.I., Métaixian, J.P., Macedo, O. and Inza, A., 2018. Automatic classification of volcano seismic signatures. *Journal of Geophysical Research: Solid Earth*, 123(12), pp.10-645.

- Nandaka, I. G. M. A., Suharna, Y., & Putra, R. (2019). Overview of Merapi volcanic activities from monitoring data 1992–2011 periods. *Journal of Disaster Research*, 14(1), 18-26.
- Ogunbo, J. N., Alagbe, O. A., Oladapo, M. I., & Shin, C. (2020). N-hidden layer artificial neural network architecture computer code: geophysical application example. *Heliyon*, 6(6).
- Ohrnberger, M. (2001). *Continuous automatic classification of seismic signals of volcanic origin at Mt. Merapi, Java, Indonesia* (Doctoral dissertation, Potsdam, Univ., Diss., 2001).
- Ranti, S. (2023, Maret 26). Mengenal Google Colab, fungsi dan manfaatnya. *Kompas.com*. Diakses dari <https://tekno.kompas.com/read/2023/03/26/17150047/mengenal-google-colab-fungsi-dan-manfaatnya>.
- Ratdomopurbo, A., & Poupinet, G. (2000). An overview of the seismicity of Merapi volcano (Java, Indonesia), 1983–1994. *Journal of Volcanology and Geothermal Research*, 100(1-4), 193-214.
- Rendon, E., Alejo, R., Castorena, C., Isidro-Ortega, F. J., & Granda-Gutierrez, E. (2020). Data sampling methods to deal with the big data multi-class imbalance problem. *Applied Sciences*, 10(4), 1276.
- Richter, G., Wassermann, J., Zimmer, M., & Ohrnberger, M. (2004). Correlation of seismic activity and fumarole temperature at the Mt. Merapi volcano (Indonesia) in 2000. *Journal of Volcanology and Geothermal Research*, 135(4), 331-342.
- Salazar, A., Arroyo, R., Pérez, N., & Benítez, D. (2020, August). Deep-learning for volcanic seismic events classification. In *2020 IEEE Colombian Conference on Applications of Computational Intelligence (IEEE ColCACI 2020)* (pp. 1-6). IEEE.
- Sharma, S., & Athaiya, A. (2017). Activation functions in neural networks. *Towards Data Sci*, 6(12), 310-316.
- S., Sigurdsson, H., Houghton, B., Rymer, H., Stix, J., & McNutt, S. (1999). *Encyclopedia of volcanoes*. Academic press.
- Sidik, I., Saroji, S., & Sulistyani, S. (2023). Implementation of machine learning for volcanic earthquake pattern classification using XGBoost algorithm. *Acta Geophysica*, 1-11.
- Spiegel, Murray R., Stephens, & Larry J. (2007). *Statistik, Edisi Ketiga*. Jakarta: Erlangga.

- Srivastava, N., Hinton, G., Krizhevsky, A., Sutskever, I., & Salakhutdinov, R. (2014). Dropout: a simple way to prevent neural networks from overfitting. *The journal of machine learning research*, 15(1), 1929-1958.
- Tokuç, A.A., Aibin, M., 2024, Underfitting and Overfitting in Machine Learning. Diakses 31 Agustus 2024 dari <https://www.baeldung.com/cs/ml-underfitting-overfitting>.
- Uzair, M., & Jamil, N. (2020, November). Effects of hidden layers on the efficiency of neural networks. In *2020 IEEE 23rd international multitopic conference (INMIC)* (pp. 1-6). IEEE.
- Venegas, P., Pérez, N., Benítez, D. S., Lara-Cueva, R., & Ruiz, M. (2019, November). Building machine learning models for long-period and volcano-tectonic event classification. In *2019 IEEE CHILEAN Conference on Electrical, Electronics Engineering, Information and Communication Technologies (CHILECON)* (pp. 1-6). IEEE.
- Voight, B., Constantine, E. K., Siswowidjono, S., & Torley, R. (2000). Historical eruptions of Merapi volcano, central Java, Indonesia, 1768–1998. *Journal of Volcanology and Geothermal Research*, 100(1-4), 69-138.
- Xu, J., Li, Z., Du, B., Zhang, M., & Liu, J. (2020, July). Reluplex made more practical: Leaky ReLU. In *2020 IEEE Symposium on Computers and communications (ISCC)* (pp. 1-7). IEEE.
- Zobin, V. M. (2011). *Introduction to volcanic seismology* (Vol. 6). Elsevier.
- Zupan, J. (1994). Introduction to artificial neural network (ANN) methods: what they are and how to use them. *Acta Chimica Slovenica*, 41(3), 327.