

- Abrams, M., Hook, S., dan Ramachandran, B., 2002, *ASTER User Handbook: Version 2*, Jet Propulsion Laboratory/California Institute of Technology.
- Al-Nahmi, F., Saddiqi, O., Hilali, A., Rhinane, H., Baidder, L., El arabi, H., Khanbari, K. 2017. *Application of remote sensing in geological mapping, case study Al Maghrabah Area - Hajjah region*. Yemen. ISPRS Ann. Photogramm Remote Sens. Spat. Inf. Sci. IV-4/W4 63–71. <https://doi.org/10.5194/isprs-annals-IV-4-W4-63-2017>.
- Altinbaş, Ü., Kurucu, Y., Bolca, M., dan El-Nahry, A.H., 2005. *Using advanced spectral analyses techniques as possible means of identifying clay minerals*: Turkish Journal of Agriculture and Forestry, v. 29, hal. 19–28, <https://doi.org/10.3906/tar-0401-7>.
- Ardi, N., dan Rahardjo, P. 2015. *Distribution of clay minerals in Sidoarjo mud volcano*. Journal of Applied Sciences, 5(17), 2652-2656.
- Beiranvand Pour, A., Hashim, M. 2016. *Application of satellite remote sensing data for geological mapping in antarctic peninsula*. In: *37th Asian Conference on Remote Sensing*. ACRS, 2016, hal. 171–177.
- Beiranvand Pour, A., Hashim, M., Hong, J.K., Park, Y. 2019. *Lithological and alteration mineral mapping in poorly exposed lithologies using Landsat-8 and ASTER satellite data: North-eastern Graham Land Antarctic Peninsula*. Ore Geol. Rev. 108, hal. 112–133. <https://doi.org/10.1016/j.oregeorev.2017.07.018>.
- Bergaya, F., Theng, B. K. G., dan Lagaly, G. 2006. *Handbook of Clay Science*: Amsterdam, Elsevier Ltd, 1224 p.
- Bernstein, L.S., Adler-Golden, S.M., Jin, X., Gregor, B., dan Sundberg, R.L., 2012, *QUICK ATMOSPHERIC CORRECTION (QUAC) CODE FOR VNIR-SWIR SPECTRAL IMAGERY: ALGORITHM DETAILS*: Spectral Sciences.
- Bhattacharjee, A., dan Ghosh, S. 2018. *Detection of mineral deposits using remote sensing and GIS techniques: A case study in the Eastern Ghats, India*. Journal of the Geological Society of India, 92(1). Hal. 1-10.
- Birkely, S. M., dan Maynard, J. B. 1984. *The nature, origin, and distribution of clays*. In *The clays and clay minerals*. Hal. 1-21. Springer, Dordrecht.
- Bishop, C.M. 2006. *Pattern recognition and machine learning*. Springer.
- Bolouki, S.M., Ramazi, H.R., Maghsoudi, A., Beiranvand Pour, A., Sohrabi, G. 2020. *A remote sensing-based application of Bayesian networks for epithermal gold potential mapping in Ahar-Arasbaran Area, NW Iran*. Remote Sens. 12, 105. <https://doi.org/10.3390/rs12010105>.
- Boser, B.E., Guyon, I.M., dan Vapnik, V.N. 1992. *A training algorithm for optimal margin classifiers*. In *Proceedings of the fifth annual workshop on Computational learning theory*. hal. 144-152. ACM.
- Caggiano, A., Angelone, R., Napolitano, F., Nele, L., Teti, R. 2018. *Dimensionality reduction of sensorial features by principal component analysis for ANN machine learning in tool condition monitoring of CFRP drilling*. Procedia CIRP 78, hal. 307–312. <https://doi.org/10.1016/j.procir.2018.09.072>.
- Chang, C.C. & Lin, C.J. 2011. *LIBSVM: A library for algoritma Support Vector Machine (SVM)s*. ACM *Transactions on Intelligent Systems and Technology*, 2(3), hal. 1–27. <https://doi.org/10.1145/1961189.1961199>
- Cortes, C., Vapnik, V. 1995. *Support-vector networks*. Mach. Learn. 20. hal. 273–297. <https://doi.org/10.1007/BF00994018>
- Cracknell, M.J., Reading, A.M. 2014. *Geological mapping using remote sensing data: a comparison of five machine learning algorithms, their response to variations in the*



Cullity, B. D., *Elements of X-ray Diffraction*. Addison - Wesley Publishing Co. Menlo Park, CA., **1978**.

Dai, J., Wang, D., Dai, H., Liu, L., Wu, Y. 2017. *Geological mapping and ore-prospecting study using remote sensing technology in jiajika area of western sichuan province*. Geol. China 44, hal. 389–398.

Dimitrov, L.I. 2002. *Mud Volcanoes-the Most Important Pathway for Degassing Deeply Buried Sediments*: Earth-Science Reviews, v. 59. Hal. 49–76, [https://doi.org/10.1016/S0012-8252\(02\)00069-7](https://doi.org/10.1016/S0012-8252(02)00069-7)

Ethem, A. 2010. *Introduction to machine learning (second edition)*. The MIT Press, Cambridge, Massachusetts

Ewing, Galen W., (1985). *Instrumental Methods of Chemical Analysis*. McGraw- Hill Book Company : Newyork

Garcia, F.I. *Algoritma Support Vector Machine (SVM)s for Non-Linearly Separable Data:*, [https://docs.opencv.org/4.x/d0/dcc/tutorial\\_non\\_linear\\_svms.html](https://docs.opencv.org/4.x/d0/dcc/tutorial_non_linear_svms.html) (diakses 03 November 2022).

Gewali, U.B., Monteiro, S.T., Saber, E., 2018. *Machine Learning Based Hyperspectral Image Analysis: A survey*.

Goetz, A . F. H. dan Rowan, L.C. 1981. *Geologic remote sensing*: Science. v. 211. hal. 781-791.

Goetz, A.F.H., Rock, B.N., dan Rowan, L.C., 1983, *Remote sensing for exploration: an overview.*: Economic Geology, v. 78, hal. 573–590, doi:10.2113/gsecongeo.78.4.573

Grebby, S., Cunningham, D., Naden, J., Tansey, K. 2012. *Application of airborne LiDAR data and airborne multispectral imagery to structural mapping of the upper section of the Troodos ophiolite, Cyprus*. Int. J. Earth Sci. 101, hal. 1645–1660. <https://doi.org/10.1007/s00531-011-0742-3>.

Guo, H., Zhen, L., Hao, J., Wang, C., Jie, L., Liang, D. 2017. *Big Earth Data: a new challenge and opportunity for Digital Earth's development*. Int J Digit Earth 10(1). hal.1–12.

Harben, P. Kuzvart, W. 1996. *A Global Geology; Industrial Minerals*. New York: Indutrial Minerals Information, Ltd.

Harris, J., Wickert, L., Lynds, T., Behnia, P., Rainbird, R., Grunsky, E., McGregor, R., Schetselaar, E. 2011. *Remote predictive mapping 3. optical remote sensing – a review for remote predictive geological mapping in northern canada*. Geosci. Can. 38, hal. 49–84.

Hastie, T., Tibshirani, R., dan Friedman, J. 2009. *The elements of statistical learning: data mining, inference, and prediction* (2nd ed.). Springer.

Jensen, J. R. 2016. *Remote Sensing of the Environment: An Earth Resource Perspective*. Pearson Education.

Kanevski, M., Pozdnukhov, A., Timonin, V. 2008. *Machine learning algorithms for geospatial data. Applications and software tools. International Congress on Environmental Modelling and Software*. 53.

Klug, H. P. dan Alexander, L.E., *X-ray Diffraction Procedures*. New York: J. Wiley and Sons, Inc., **1974**.

Kotsiantis, S., 2007. *Supervised machine learning: A review of classification techniques*. Informatica (Slovenia) 31, hal. 249–268.

Kulabako, R., & Tateishi, R. (2007). *Introduction to satellite remote sensing and image interpretation In Satellite Remote Sensing and GIS Applications in Agricultural Meteorology*. Hal. 1-30. Springer.

Lamb, D. G., dan Fryrear, D. W. 1987. *Remote sensing of clay minerals. In Remote sensing of soils and landscapes*. Hal. 101-130. Springer, Dordrecht.



- Lautovic, R., Fourni, D., Campbell, J. 2018. *Assessment of convolution neural networks for surficial geology mapping in the South Rae geological region, Northwest Territories, Canada*. *Remote Sens.* 10, 307. <https://doi.org/10.3390/rs10020307>.
- Lillesand, T.M., Kiefer, R.W., dan Chipman, J.W., 2015, *Remote Sensing and Image Interpretation*. John Wiley & Sons. ISBN 9781118343289
- Mazzini, A., Svensen, H., Akhamanov, G.G., Aloisi, G., Planke, S., Malthé Sorensen, A., dan Istadi, B. 2007. *Triggering and Dynamic Evolution of the LUSI Mud Volcano, Indonesia*. Elsevier Journal of Earth and Planetary Science Letters 261 (2007), hal. 375-388
- Meunier, A. 2005. *Clays*. Berlin: Springer
- Mohsin, Anto. *The Sidoarjo Mudflow and the Muddiness of an Environmental Disaster*. Environment & Society Portal. Arcadia. Spring 2017. No. 5. Rachel Carson Center for Environment and Society. <https://doi.org/10.5282/rcc/7767>
- Mukherjee, S., 2013, *The Science of Clays: Applications in Industry, Engineering, and Environment*. New Delhi, Springer, 335 p.
- Murray, H.H., 2007, *Applied Clay Mineralogy: Occurrences, Processing and Application of Kaolins, Bentonites, Palygorskite-Sepiolite, and Common Clays* (2nd ed): Amsterdam, Elsevier, 177 p.
- Planke, S., Svensen, H., Hovland, M., Banks, D.A., dan Jamtveit, B. 2003. *Mud and fluid migration in active mud volcanoes in Azerbaijan*. *Geo-Marine Letters* 23. Hal. 258–268. <https://doi.org/10.1016/B978-0-12-409548-9.09512-9>
- Platt, J.C., Cristianini, N., Shawe-Taylor, J. 2000. *Large margin DAGs for multiclass classification*. In: *Advances in neural information processing systems*. hal. 547-553.
- Rajesh, H., 2004. *Application of remote sensing and GIS in mineral resource mapping-an overview*. *J. Mineral. Petrol. Sci.* 99, hal. 83–103. <https://doi.org/10.2465/jmps.99.83>.
- Raschka, S., Liu, Y.H., dan Mirjalili, V., 2022. *Machine Learning with PyTorch and Scikit-Learn* (S. Editing, Ed.): Birmingham, UK, Packt Publishing Ltd., 723 p.
- Reeves, G. M. I. Sims. J. Cripps, C. 2006. *Clay Materials Used in Construction*. London: Geological Society, Engineering Geology Special Publication.
- Sabins, F.F., 1999. *Remote sensing for mineral exploration*. *Ore Geol. Rev.* 14, hal. 157–183. [https://doi.org/10.1016/S0169-1368\(99\)00007-4](https://doi.org/10.1016/S0169-1368(99)00007-4).
- Sabins, F.F. 1999. *Remote Sensing: Principles and Interpretation*. Third Edition. Waveland Press, Illinois.
- Sang, X., Xue, L., Ran, X., Li, X., Liu, J., Liu, Z. 2020. *Intelligent high-resolution geological mapping based on SLIC-CNN*. *ISPRS Int. J. Geo-Inf.* 9, 99. <https://doi.org/10.3390/ijgi9020099>.
- Santosa, S. dan Suwarti, T. 1992. *Peta Geologi Lembar Malang, Jawa Timur*. Bandung. Pusat Penelitian dan Pengembangan Geologi.
- Saragih, B., dan Ramdhan, D. M. 2021. *Identifikasi mineral lempung menggunakan teknologi penginderaan jauh dengan citra satelit ASTER*. *Jurnal Sains dan Teknologi Lingkungan*, 13(1), hal. 8-17.
- Sayago, S., Dr. 2011. *Remote Sensing and Image Interpretation with ASTER and ENVI*. Cengage Learning.
- Setiadi, I., Darmawan, A., Marjiyono. 2016. *Investigation of Subsurface Geological Structure in Sidoarjo Mud Volcano Affected Area Based on Geomagnetic Data Analysis*. Bandung: Jakarta Selatan.
- Shrivastava, V. S. 2009. *X-ray Diffraction and Mineralogical Study of Soil: A Review*. *Journal of Applied Chemical Research*. v. 9. Hal. 41-51.
- Sidiropoulos, P., Palyvos, J.A., dan Alexandridis, T.K. 2015. *Image Processing of ASTER and Landsat-8 Data for Mineral Exploration*. *Remote Sensing*, 7(9), hal. 11745-11765. doi:10.3390/rs70911745



Supriyanti, A. Y., Scamion, B.R.: 2019. *How can big data and machine learning benefit environment and water management: a survey of methods, applications, and future directions*. Environ. Res. Lett. 14, 73001. <https://doi.org/10.1088/1748-9326/ab1b7d>.

USGS (2013). ASTER Radiometric Calibration. USGS Land Remote Sensing Program. Diakses

[https://lpdaac.usgs.gov/dataset\\_discovery/aster/aster\\_products\\_table/aster\\_radiometric\\_calibration](https://lpdaac.usgs.gov/dataset_discovery/aster/aster_products_table/aster_radiometric_calibration)

Van Bemmelen, R.W. (1949) *The Geology of Indonesia*, vol. I.A. *General Geology*. Martinus Nyhoff, The Hague.

Velde, B. 1992. *Introduction to Clay Minerals: Chemistry, Origins, Uses, and Enviromental Significance*. Berlin: Springer.

Velde, B. 1995. *Origin and Mineralogy of Clays: Clays and The Environment*: New York, Springer-Verlag Berlin Heidelberg, 348 p.

Warren, B.E. 1941. *X-ray diffraction methods*: Journal of Applied Physics, v. 12, hal. 375 383, doi:10.1063/1.1712915.

Xie, T., Liu, R., Wei, Z. 2020. *Improvement of the fast clustering algorithm improved by k-means in the big data*. Appl. Math. Nonlin. Sci. 5. hal. 1–10.

<https://doi.org/10.2478/amns.2020.1.00001>

Yousefi, M., Tabatabaei, S.H., Rikhtehgaran, R., Pour, A.B., dan Pradhan, B. 2021.

*Application of Dirichlet Process and Algoritma Support Vector Machine (SVM) Techniques for Mapping Alteration Zones Associated with Porphyry Copper Deposit Using ASTER Remote Sensing Imagery*: Minerals. v. 11. hal. 1–28, doi:10.3390/min11111235.

Zhang, X., dan Ma, Y. 2010. *Support vector machine for remote sensing image classification: A review*. IEEE Geoscience and Remote Sensing Magazine. 3(2). Hal. 8-22.

