

REFERENCES

- A. Vasave Mohan, & B. Garud Sandip. (2023). Geographical Information System and Remote Sensing Based Assessment of Forest Canopy Density (FCD) of Toranmal Forest Range (TFR) in Nandurbar District, Maharashtra. *Advances in Geographical Research*, 20–31. <https://doi.org/10.5281/ZENODO.10554895>
- Abdi, H., & Williams, L. J. (2010). Principal component analysis. *Wiley Interdisciplinary Reviews: Computational Statistics*, 2(4), 433–459. <https://doi.org/10.1002/WICS.101>
- Aboelnour, M., Engel, B. A., Aboelnour, M., & Engel, B. A. (2018). Application of Remote Sensing Techniques and Geographic Information Systems to Analyze Land Surface Temperature in Response to Land Use/Land Cover Change in Greater Cairo Region, Egypt. *Journal of Geographic Information System*, 10(1), 57–88. <https://doi.org/10.4236/JGIS.2018.101003>
- Achanta, R., & Süssstrunk, S. (2017). Superpixels and polygons using simple non-iterative clustering. *Proceedings - 30th IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2017, 2017-January*, 4895–4904. <https://doi.org/10.1109/CVPR.2017.520>
- Aggarwal, C. C. (2015). *Data Mining*. <https://doi.org/10.1007/978-3-319-14142-8>
- Alfayoumy, A. (2021). *Supervised Algorithms for the Detection of COVID-19 from Chest Scan Images*. <https://doi.org/10.13140/RG.2.2.11529.57448>
- Alqurashi, A. F., & Kumar, L. (2013). Investigating the Use of Remote Sensing and GIS Techniques to Detect Land Use and Land Cover Change: A Review. *Advances in Remote Sensing*, 02(02), 193–204. <https://doi.org/10.4236/ARS.2013.22022>
- Aryal, J., Sitaula, C., & Frery, A. C. (2023). Land use and land cover (LULC) performance modeling using machine learning algorithms: a case study of

the city of Melbourne, Australia. *Scientific Reports*, 13(1), 13510. <https://doi.org/10.1038/s41598-023-40564-0>

Baetens, L., Desjardins, C., & Hagolle, O. (2019). Validation of Copernicus Sentinel-2 Cloud Masks Obtained from MAJA, Sen2Cor, and FMask Processors Using Reference Cloud Masks Generated with a Supervised Active Learning Procedure. *Remote Sensing*, 11(4), 433. <https://doi.org/10.3390/rs11040433>

Balha, A., Mallick, J., Pandey, S., Gupta, S., & Singh, C. K. (2021). A comparative analysis of different pixel and object-based classification algorithms using multi-source high spatial resolution satellite data for LULC mapping. *Earth Science Informatics*, 14(4), 2231–2247. <https://doi.org/10.1007/S12145-021-00685-4/TABLES/7>

Basheer, S., Wang, X., Farooque, A. A., Nawaz, R. A., Liu, K., Adekanmbi, T., & Liu, S. (2022). Comparison of Land Use Land Cover Classifiers Using Different Satellite Imagery and Machine Learning Techniques. *Remote Sensing*, 14(19), 4978. <https://doi.org/10.3390/rs14194978>

Belgiu, M., & Drăgu, L. (2016). Random forest in remote sensing: A review of applications and future directions. *ISPRS Journal of Photogrammetry and Remote Sensing*, 114, 24–31. <https://doi.org/10.1016/J.ISPRSJPRS.2016.01.011>

Blaschke, T. (2010). Object based image analysis for remote sensing. *ISPRS Journal of Photogrammetry and Remote Sensing*, 65(1), 2–16. <https://doi.org/10.1016/J.ISPRSJPRS.2009.06.004>

Blaschke, T., Hay, G. J., Kelly, M., Lang, S., Hofmann, P., Addink, E., Queiroz Feitosa, R., van der Meer, F., van der Werff, H., van Coillie, F., & Tiede, D. (2014). Geographic Object-Based Image Analysis – Towards a new paradigm. *ISPRS Journal of Photogrammetry and Remote Sensing*, 87, 180–191. <https://doi.org/10.1016/J.ISPRSJPRS.2013.09.014>

Breiman, L. (2001). Random forests. *Machine Learning*, 45(1), 5–32. <https://doi.org/10.1023/A:1010933404324/METRICS>

- Briassoulis, H. (2000). Analysis of Land Use Change: Theoretical and Modeling Approaches. *Wholbk*. <https://ideas.repec.org/b/rri/wholbk/17.html>
- Cervantes, J., Garcia-Lamont, F., Rodríguez-Mazahua, L., & Lopez, A. (2020). A comprehensive survey on support vector machine classification: Applications, challenges and trends. *Neurocomputing*, 408, 189–215. <https://doi.org/10.1016/J.NEUCOM.2019.10.118>
- Dale, V. H., King, A. W., Mann, L. K., Washington-Allen, R. A., & Mccord, R. A. (1998). Assessing land-use impacts on natural resources. *Environmental Management*, 22(2), 203–211. <https://doi.org/10.1007/S002679900097/METRICS>
- Deilmai, B. R., Ahmad, B. Bin, & Zabihi, H. (2014). Comparison of two Classification methods (MLC and SVM) to extract land use and land cover in Johor Malaysia. *IOP Conference Series: Earth and Environmental Science*, 20, 012052. <https://doi.org/10.1088/1755-1315/20/1/012052>
- Drusch, M., Del Bello, U., Carlier, S., Colin, O., Fernandez, V., Gascon, F., Hoersch, B., Isola, C., Laberinti, P., Martimort, P., Meygret, A., Spoto, F., Sy, O., Marchese, F., & Bargellini, P. (2012). Sentinel-2: ESA's Optical High-Resolution Mission for GMES Operational Services. *Remote Sensing of Environment*, 120, 25–36. <https://doi.org/10.1016/J.RSE.2011.11.026>
- E. Nyland, K., E. Gunn, G., I. Shiklomanov, N., N. Engstrom, R., & A. Streletskiy, D. (2018). Land Cover Change in the Lower Yenisei River Using Dense Stacking of Landsat Imagery in Google Earth Engine. *Remote Sensing*, 10(8), 1226. <https://doi.org/10.3390/rs10081226>
- Ellis, E., & Pontius, R. (2007). *Land-use and land-cover change*.
- ESA. (2015). *SENTINEL-2 User Handbook*.
- Fekete, A. (2023). Peri-urban growth into natural hazard-prone areas: mapping exposure transformation of the built environment in Nairobi and Nyeri, Kenya, from 1948 to today. *Natural Hazards: Journal of the International Society for*

the Prevention and Mitigation of Natural Hazards, 119(2), 859–882.
<https://doi.org/10.1007/S11069-022-05515-4>

Gao, Y., & Mas, J. F. (2008). *A COMPARISON OF THE PERFORMANCE OF PIXEL-BASED AND OBJECT-BASED CLASSIFICATIONS OVER IMAGES WITH VARIOUS SPATIAL RESOLUTIONS*.

Gaur, S., Mittal, A., Bandyopadhyay, A., Holman, I., & Singh, R. (2020). Spatio-temporal analysis of land use and land cover change: a systematic model inter-comparison driven by integrated modelling techniques. *International Journal of Remote Sensing*, 41(23), 9229–9255.
<https://doi.org/10.1080/01431161.2020.1815890>

Guo, S., Feng, Z., Wang, P., Chang, J., Han, H., Li, H., Chen, C., & Du, W. (2024). Mapping and Classification of the Liaohe Estuary Wetland Based on the Combination of Object-Oriented and Temporal Features. *IEEE Access*, 12, 60496–60512. <https://doi.org/10.1109/ACCESS.2024.3389935>

Hall-Beyer, M. (2017). Practical guidelines for choosing GLCM textures to use in landscape classification tasks over a range of moderate spatial scales. *International Journal of Remote Sensing*, 38(5), 1312–1338.
<https://doi.org/10.1080/01431161.2016.1278314>

Ho, T. K. (1995). Random decision forests. *Proceedings of the International Conference on Document Analysis and Recognition, ICDAR*, 1, 278–282.
<https://doi.org/10.1109/ICDAR.1995.598994>

Huang, S., Tang, L., Hupy, J. P., Wang, Y., & Shao, G. (2021). A commentary review on the use of normalized difference vegetation index (NDVI) in the era of popular remote sensing. *Journal of Forestry Research*, 32(1), 1–6.
<https://doi.org/10.1007/S11676-020-01155-1/FIGURES/2>

KARAKUŞ, P. (2024). Object Based Classification in Google Earth Engine Combining SNIC and Machine Learning Methods (Case Study: Lake Köyceğiz). *Turkish Journal of Remote Sensing and GIS*, 125–137.
<https://doi.org/10.48123/RSGIS.1411380>

- Kherif, F., & Latypova, A. (2020). Principal component analysis. *Machine Learning: Methods and Applications to Brain Disorders*, 209–225. <https://doi.org/10.1016/B978-0-12-815739-8.00012-2>
- Kurita, T. (2020). Principal Component Analysis (PCA). *Computer Vision*, 1–4. https://doi.org/10.1007/978-3-030-03243-2_649-1
- Lemenkova, P. (2024). Support Vector Machine Algorithm for Mapping Land Cover Dynamics in Senegal, West Africa, Using Earth Observation Data. *Earth*, 5(3), 420–462. <https://doi.org/10.3390/earth5030024>
- Li, C., Guo, B., Wang, G., Zheng, Y., Liu, Y., & He, W. (2020). NICE: Superpixel Segmentation Using Non-Iterative Clustering with Efficiency. *Applied Sciences* 2020, Vol. 10, Page 4415, 10(12), 4415. <https://doi.org/10.3390/APP10124415>
- Li, F., Yigitcanlar, T., Nepal, M., Nguyen, K., & Dur, F. (2023). Machine learning and remote sensing integration for leveraging urban sustainability: A review and framework. *Sustainable Cities and Society*, 96, 104653. <https://doi.org/10.1016/J.SCS.2023.104653>
- Maćkiewicz, A., & Ratajczak, W. (1993). Principal components analysis (PCA). *Computers & Geosciences*, 19(3), 303–342. [https://doi.org/10.1016/0098-3004\(93\)90090-R](https://doi.org/10.1016/0098-3004(93)90090-R)
- Maxwell, A. E., Warner, T. A., & Fang, F. (2018). Implementation of machine-learning classification in remote sensing: an applied review. *International Journal of Remote Sensing*, 39(9), 2784–2817. <https://doi.org/10.1080/01431161.2018.1433343>
- Melati, D. N., Astisiasari, & Trinugroho. (2022). An Assessment of Object-based Classification Compared to Pixel-based Classification in Google Earth Engine Using Random Forest. *2022 IEEE Asia-Pacific Conference on Geoscience, Electronics and Remote Sensing Technology: Understanding the Interaction of Land, Ocean, and Atmosphere: Smart City and Disaster Mitigation for Regional Resilience, AGERS 2022 - Proceeding*, 73–78. <https://doi.org/10.1109/AGERS56232.2022.10093267>

- Mendoza, M. E., Granados, E. L., Geneletti, D., Pérez-Salicrup, D. R., & Salinas, V. (2011). Analysing land cover and land use change processes at watershed level: A multitemporal study in the Lake Cuitzeo Watershed, Mexico (1975–2003). *Applied Geography*, *31*(1), 237–250. <https://doi.org/10.1016/J.APGEOG.2010.05.010>
- Mohanaiah, P., Sathyanarayana, P., Gurukumar, L., & Professor, A. (2013). Image Texture Feature Extraction Using GLCM Approach. *International Journal of Scientific and Research Publications*, *3*(5). www.ijsrp.org
- Munoz, X., Freixenet, J., Cufí, X., & Martí, J. (2003). Strategies for image segmentation combining region and boundary information. *Pattern Recognition Letters*, *24*(1–3), 375–392. [https://doi.org/10.1016/S0167-8655\(02\)00262-3](https://doi.org/10.1016/S0167-8655(02)00262-3)
- Naderi, M. (2023). Land use and land cover classification by combining GLCM, SNIC, and machine learning algorithms in Google Earth Engine environment (case study: part of the lands of North Mahabad, West Azerbaijan). *Iranian Journal of Remote Sensing & GIS*. <https://doi.org/10.48308/GISJ.2023.233271.1181>
- Olorunfemi, I. E., Fasinmirin, J. T., Olufayo, A. A., & Komolafe, A. A. (2020). GIS and remote sensing-based analysis of the impacts of land use/land cover change (LULCC) on the environmental sustainability of Ekiti State, southwestern Nigeria. *Environment, Development and Sustainability*, *22*(2), 661–692. <https://doi.org/10.1007/S10668-018-0214-Z/FIGURES/13>
- Padmavathi, G., Sumi, M. A., & Head. (2010). Empirical Evaluation of Suitable Segmentation Algorithms for IR Images. *IJCSI International Journal of Computer Science Issues*, *7*(2).
- Panas, M., Harmain, A., Kurniawan, H., Maulina, D., & Yogyakarta, M. U. A. (2021). NORMALISASI DATA UNTUK EFISIENSI K-MEANS PADA PENGELOMPOKAN WILAYAH BERPOTENSI KEBAKARAN HUTAN DAN LAHAN BERDASARKAN SEBARAN TITIK PANAS.

TEKNIMEDIA: Teknologi Informasi Dan Multimedia, 2(2), 83–89.
<https://doi.org/10.46764/TEKNIMEDIA.V2I2.49>

- Phan, T. N., Kuch, V., & Lehnert, L. W. (2020). Land Cover Classification using Google Earth Engine and Random Forest Classifier—The Role of Image Composition. *Remote Sensing*, 12(15), 2411.
<https://doi.org/10.3390/rs12152411>
- Putri, E. S., Sari, A. W., Karim, R. A., Somantri, L., & Ridwana, R. (2021). Pemanfaatan Citra Sentinel-2 Untuk Analisis Vegetasi Di Wilayah Gunung Manglayang. *Jurnal Pendidikan Geografi Undiksha*, 9(2), 133–143.
<https://doi.org/10.23887/JJPG.V9I2.35357>
- Qu, L., Chen, Z., Li, M., Zhi, J., & Wang, H. (2021). Accuracy Improvements to Pixel-Based and Object-Based LULC Classification with Auxiliary Datasets from Google Earth Engine. *Remote Sensing*, 13(3), 453.
<https://doi.org/10.3390/rs13030453>
- Rakhmat Awaliyan, M., Yohanes Budi Sulistioadi, dan, Pemantapan Kawasan Hutan Wialayh Samarinda, B. I., Kehutanan, F., & Mulawarman, U. (2018). KLASIFIKASI PENUTUPAN LAHAN PADA CITRA SATELIT SENTINEL-2A DENGAN METODE TREE ALGORITHM. *ULIN: Jurnal Hutan Tropis*, 2(2), 98–104. <https://doi.org/10.32522/UJHT.V2I2.1363>
- Raut Mayur Patil, A. A., & Dhondrikar Sushant D Kamble, C. P. (2016). Texture Parameters Extraction of Satellite Image. *IJSTE-International Journal of Science Technology & Engineering* |, 2(11). www.ijste.org
- Riggan Jr, N. D., Weih Jr, R. C., Jr, N. D., Jr, R. C., Riggan, N., & Weih, R. (2009). Comparison of Pixel-based versus Object-based Land Use/Land Cover Classification Methodologies. *Journal of the Arkansas Academy of Science*, 63, 145.
- Rogan, J., & Chen, D. M. (2004). Remote sensing technology for mapping and monitoring land-cover and land-use change. *Progress in Planning*, 61(4), 301–325. [https://doi.org/10.1016/S0305-9006\(03\)00066-7](https://doi.org/10.1016/S0305-9006(03)00066-7)

- Rousset, G., Despinoy, M., Schindler, K., & Mangeas, M. (2021). Assessment of deep learning techniques for land use land cover classification in southern new caledonia. *Remote Sensing*, 13(12), 2257. <https://doi.org/10.3390/RS13122257/S1>
- Savitha, C., & Reshma, T. (2024). *Performance Evaluation of Support Vector Machine and Random Forest Techniques for Land Use-Land Cover Classification—A Case Study on a Mili Scale Agricultural Watershed, Tadepalligudem, India* (pp. 379–392). https://doi.org/10.1007/978-981-99-8568-5_28
- Selvaraj, R., Geraldine, D., & Amali, B. (2023). Assessment of object-based classification for mapping land use and land cover using google earth. *Copyright© 2023 Global NEST Printed in Greece. All Rights Reserved Selvaraj R. and Amali D.G.B.*, 25(7), 131–138. <https://doi.org/10.30955/gnj.004829>
- Shafizadeh-Moghadam, H., Khazaei, M., Alavipanah, S. K., & Weng, Q. (2021a). Google Earth Engine for large-scale land use and land cover mapping: an object-based classification approach using spectral, textural and topographical factors. *GIScience & Remote Sensing*, 58(6), 914–928. <https://doi.org/10.1080/15481603.2021.1947623>
- Singh, K. Kant., Elhoseny, Mohamed., Singh, Akansha., & Elngar, A. A. . (2021). *Machine learning and the internet of medical things in healthcare.*
- Tassi, A., Gigante, D., Modica, G., Di Martino, L., & Vizzari, M. (2021). Pixel- vs. Object-Based Landsat 8 Data Classification in Google Earth Engine Using Random Forest: The Case Study of Maiella National Park. *Remote Sensing 2021, Vol. 13, Page 2299, 13(12)*, 2299. <https://doi.org/10.3390/RS13122299>
- Tassi, A., & Vizzari, M. (2020). Object-Oriented LULC Classification in Google Earth Engine Combining SNIC, GLCM, and Machine Learning Algorithms. *Remote Sensing 2020, Vol. 12, Page 3776, 12(22)*, 3776. <https://doi.org/10.3390/RS12223776>

- Ting, K. M. (2011). Confusion Matrix. *Encyclopedia of Machine Learning*, 209–209. https://doi.org/10.1007/978-0-387-30164-8_157
- Tran, T. N., Lam, B. M., Nguyen, A. T., & Le, Q. B. (2022). Load forecasting with support vector regression: influence of data normalization on grid search algorithm. *International Journal of Electrical and Computer Engineering (IJECE)*, 12(4), 3410–3420. <https://doi.org/10.11591/ijece.v12i4.pp3410-3420>
- van Wezel, M., & Potharst, R. (2007). Improved customer choice predictions using ensemble methods. *European Journal of Operational Research*, 181(1), 436–452. <https://doi.org/10.1016/J.EJOR.2006.05.029>
- Varma, N. A. K., Manne, S., & Sri, P. L. (2023). Object based Change detection on Temporal Multi-Spectral Satellite imagery. *Proceedings of the 2023 6th International Conference on Recent Trends in Advance Computing, ICRTAC 2023*, 354–359. <https://doi.org/10.1109/ICRTAC59277.2023.10480725>
- Wang, Z., Wei, C., Liu, X., Zhu, L., Yang, Q., Wang, Q., Zhang, Q., & Meng, Y. (2022a). Object-based change detection for vegetation disturbance and recovery using Landsat time series. *GIScience & Remote Sensing*, 59(1), 1706–1721. <https://doi.org/10.1080/15481603.2022.2129870>
- Wang, Z., Wei, C., Liu, X., Zhu, L., Yang, Q., Wang, Q., Zhang, Q., & Meng, Y. (2022b). Object-based change detection for vegetation disturbance and recovery using Landsat time series. *GIScience & Remote Sensing*, 59(1), 1706–1721. <https://doi.org/10.1080/15481603.2022.2129870>
- Werdiningsih, I., Novitasari, D. C. R., & Haq, D. Z. (2022). *Pengelolaan Data Mining dengan Pemrograman Matlab*. Airlangga University Press. https://books.google.co.th/books?id=CgOdEAAAQBAJ&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
- Xu, H. (2006). Modification of normalised difference water index (NDWI) to enhance open water features in remotely sensed imagery. *International Journal of Remote Sensing*, 27(14), 3025–3033. <https://doi.org/10.1080/01431160600589179>

- Ya'acob, N., Azize, A. B. M., Mahmon, N. A., Yusof, A. L., Azmi, N. F., & Mustafa, N. (2014). Temporal Forest Change Detection and Forest Health Assessment using Remote Sensing. *IOP Conference Series: Earth and Environmental Science*, 19. <https://doi.org/10.1088/1755-1315/19/1/012017>
- Zha, Y., Gao, J., & Ni, S. (2003). Use of normalized difference built-up index in automatically mapping urban areas from TM imagery. *International Journal of Remote Sensing*, 24(3), 583–594. <https://doi.org/10.1080/01431160304987>
- Zhao, Q., Yu, L., Li, X., Peng, D., Zhang, Y., & Gong, P. (2021). Progress and trends in the application of google earth and google earth engine. *Remote Sensing*, 13(18), 3778. <https://doi.org/10.3390/RS13183778/S1>

