

AI articles previously published by GT

1. **Tierra, A. (2016).** Nonlinear and discontinuities modeling of time series using artificial neural network with radial basis function. *Geographia Technica*, 11(2), 102–112. https://doi.org/10.21163/GT_2016.112.10 (ANN–RBF to model GNSS/GPS station height time series with gaps & trend changes).
2. **Moldovan, I.F. (2020).** Calculation of the river flow with different probabilities of occurrence using artificial neural network. *Geographia Technica*, 15(1), 162–172. https://doi.org/10.21163/GT_2020.151.15 (ANN–RBF to estimate river flows at specified return periods).
3. **Eslaminezhad, S.A., Omarzadeh, D., Eftekhari, M. & Akbari, M. (2021).** Development of a data-driven model to predict landslide sensitive areas. *Geographia Technica*, 16(1), 97–112. https://doi.org/10.21163/GT_2021.161.09 (ANN + Binary Particle Swarm Optimization for landslide susceptibility mapping; GWR for interpretation).
4. **Aroonsri, I. & Sangpradid, S. (2021).** Artificial Neural Networks for the classification of shrimp farm from satellite imagery. *Geographia Technica*, 16(2), 149–159. https://doi.org/10.21163/GT_2021.162.12 (ANN image classification of shrimp farms from Sentinel-2).
5. **Zholdosbekov, E., Garg, V., Thakur, P.K., Mduishonakunov, M. & Voda, M. (2021).** Delineation Radar Zones of Glaciers in the Ala-Archa Valley of Kyrgyz Republic. *Geographia Technica*, Special issue: *Geomatics Applications for Geography – GAG*, Vol. 16, 100 -110. https://doi.org/10.21163/GT_2021.163.08 (SVM - Support Vector Machine).
6. **Dewi, R.S., Rizaldy, A., Hartano, P. & Suprajaka, S. (2021).** Assessing the Accuracy of Shallow Water Depth Estimation by Using Multispectral Satellite Images. *Geographia Technica*, Special issue: *Geomatics Applications for Geography – GAG*, Vol. 16, 180 -197. https://doi.org/10.21163/GT_2021.163.14 (RF - Random Forest & SVM - Support Vector Machine).
7. **Musthofa, F., Widyatmanti, W., Arjasakusuma, S., Umarhadi, D.A., Putri, D.A., Raharja, F.F. & Arrasyid, M.K. (2022).** Machine learning for mapping spatial distribution of thickness and carbon stock of tropical peatland based on remote sensing data: A case study in lake Sentarum National Park, Indonesia. *Geographia Technica*, 17(1), 46–57. https://doi.org/10.21163/GT_2022.171.04 (Random Forest, Quantile Regression Forests, Cubist to model peat thickness and map carbon stock).
8. **Ryan, M., Saputro, A.H. & Sopaheluwakan, A. (2022).** Intelligent low-level wind shear alert prediction system based on anemometer sensor network and Temporal Convolutional Network (TCN). *Geographia Technica*, 17(1), 92–103. https://doi.org/10.21163/GT_2022.171.07 (Temporal Convolutional Network (deep learning) vs LSTM/GRU to predict wind shear occurrence & duration).
9. **Nguyen, H.D. (2022).** Daily streamflow forecasting using Extreme Learning Machine (ELM) and optimization algorithm. Case study: a river in Vietnam. *Geographia Technica*, 17(2), 148–163. https://doi.org/10.21163/GT_2022.172.13 (ELM neural network + optimization for streamflow forecasting).
10. **Dewi, R.S., Rachma, T.R.N., Sofian, I., Oktaviani, N., Safi'I, A.N., Suprajaka, Rimayanti, A. & Artanto, E. (2022).** Integrating multisource of bathymetry data for updating basepoint and baseline positions of maritime boundary. *Geographia Technica*, 17(1), 18–32. https://doi.org/10.21163/GT_2022.171.02 (Random Forest used to derive Satellite-Derived Bathymetry from Sentinel-2).

11. **Pungching, J. & Pilailar, P. (2023).** Developing a flood forecasting system with machine learning and applying to Geographic Information System. *Geographia Technica*, 18(1), 1–18. https://doi.org/10.21163/GT_2023.181.01 (supervised ML with sliding-window setup for real-time inflow & water-level forecasting; ML framework described in paper).
12. **Fikriyah, V.N., Anggani, N.L., Kiat, U.E.I., Khikmah, F., Arroyan, W.A. & Rizki, M.F. (2023).** Integrated use of optical and radar data for cropland mapping over the mountain slope area in Boyolali, Indonesia. *Geographia Technica*, 18(1), 108–122. https://doi.org/10.21163/GT_2023.181.08 (Random Forest classification using fused optical/SAR features).
13. **Worachairungreung, M., Thanakunwutthirot, K. & Kulpanich, N. (2023).** A study on oil palm classification for Ranong Province using data fusion and machine learning algorithms. *Geographia Technica*, 18(1), 161–176. https://doi.org/10.21163/GT_2023.181.12 (Random Forest classification with multisource feature stacks for oil-palm mapping).
14. **Hung, P.M., Nguyen, H.D. & Van, C.P. (2023).** Assessment of inundation susceptibility in the context of climate change, based on machine learning and remote sensing: case study in Vinh Phuc province of Vietnam. *Geographia Technica*, 18(2), 93–112. https://doi.org/10.21163/GT_2023.182.07 (comparative ML: CatBoost, ExtraTrees, and SVM for flood/inundation susceptibility mapping).
15. **Nguyen, H.D., Giang, V.T., Truong, Q.-H., Şerban, G. & Petrişor, A.-I. (2024).** Groundwater potential assessment in Gia Lai Province (Vietnam) using machine learning, remote sensing and GIS. *Geographia Technica*, 19(2), 13–32. https://doi.org/10.21163/GT_2024.192.02 (DNN, XGBoost, CatBoost to model groundwater potential).
16. **Ningrum, P.L.K., Pratana, B.A.S. & Arjakusuma, S. (2024).** Synergizing Landsat-8 and MODIS data for enhanced paddy phenology assessment and crop frequency mapping: a fusion of phenological insights and machine learning algorithms. *Geographia Technica*, 19(1), 121–134. https://doi.org/10.21163/GT_2024.191.09 (Decision Tree & Random Forest for crop/phenology mapping and cropping-frequency estimation).
17. **Phoophathong, T., Laosuwan, T., Sangpradid, S., Uttaruk, Y. & Angkahad, T. (2025).** Improvement of traditional and hybrid interpolation techniques using Support Vector Machine for land surface temperature analysis in urban areas. *Geographia Technica*, 20(1), 313–328. https://doi.org/10.21163/GT_2025.201.21 (SVM used to enhance LST interpolation/analysis).
18. **Intarat, K., Netsawang, P., Narawatthana, S., Promaoh, C. & Chuenkamol, S. (2025).** Integrating spectral and texture indices with machine learning for rice leaf area index (LAI) estimation in Suphan Buri, Thailand. *Geographia Technica*, 20(1), 207–227. https://doi.org/10.21163/GT_2025.201.15 (machine-learning regression using spectral/texture features for LAI estimation).
19. **Nguyen, Q.-H., Du, Q.V.V., Pham, V.T., Vuong, H.N., Nguyen, V.H., Sang, T.V. & Petrişor, A.-I. (2025).** Banana reigns wilt based on machine learning and UAV-based multispectral imagery. *Geographia Technica*, 20(1), 329–345. https://doi.org/10.21163/GT_2025.201.22 (ML classification on UAV multispectral data for crop disease detection).
20. **Sriwahyuni, L., Nurdianti, S., Nugrahani, E.H. & Najib, M.K. (2025).** Performance of machine learning for imputing missing daily rainfall data in East Java under multiple satellite data models. *Geographia Technica*, 20(1), 346–368. https://doi.org/10.21163/GT_2025.201.23 (multi-model ML for rainfall imputation; MLP selected as best performer).
21. **Intarat, K., Kuankhamnuan, P., Jangsawang, W., (2026).** Flood mapping in Phra Nakhon Si Ayutthaya, Thailand, utilizing SENTINEL-1 SAR imagery and deep learning approaches. *Geographia Technica*, Vol 21(2), Special Issue: Artificial Intelligence Applications in Geography, pp. 1-18. https://doi.org/10.21163/GT_2026.211.04