APPENDIX-A

LIST OF PUBLICATIONS

1. Journal Publications

   [a] Bhagowati, B., and Ahamad, K.U. Examining the effectiveness of artificially replicated lake systems in predicting eutrophication indicators: a comparative data-driven analysis. *Water Quality Research Journal*, 59 (1): 1-25, 2024. https://doi.org/10.2166/wqrj.2024.014.

   [b] Bhagowati, B., Talukdar, B., Narzary, B.K., and Ahamad, K.U. Prediction of lake eutrophication using ANN and ANFIS by artificial simulation of lake ecosystem. *Modeling Earth Systems and Environment*, 8 (4): 5289–5304, 2022. https://doi.org/10.1007/s40808-022-01377-8.

   [c] Bhagowati, B., and Ahamad, K.U. A review on lake eutrophication dynamics and recent developments in lake modeling. *Ecohydrology and Hydrobiology*, 19 (1): 155–166, 2019. https://doi.org/10.1016/j.ecohyd.2018.03.002.

2. Book Chapter

   [a] Bhagowati, B., Talukdar, B., and Ahamad, K.U. Lake Eutrophication: Causes, Concerns and Remedial Measures. In Kumar, M., Snow, D., Honda, R., editors, *Emerging Issues in the Water Environment during Anthropocene: A South East Asian Perspective*, pages 211-222, ISBN:978-981-32-9771-5. Springer Singapore, 2020.

3. Conference Paper Presented

   [a] One conference paper entitled "Artificial Neural Network Models to Predict Dissolved Oxygen and Secchi Depth in Eutrophic Lakes" has been presented in National Environmental Conference (NEC2019) held on 31st January to 2nd February' 2019 in IIT Bombay.

   [b] One conference paper entitled "Dissolved oxygen (DO) prediction in eutrophic lakes using Artificial Neural Network model" has been presented in National Conference RDCI-2019 held on 21st to 22nd September' 2019 in MANIT Bhopal.

BIBLIOGRAPHY

[1] Addy, K., and Green, L.T. Phosphorus and lake aging. *Natural Resources Facts*, Fact Sheet (No. 96-2): 1996.

[2] Ahlgren, I., Frisk, T., and Kamp-Nielsen, L. Empirical and theoretical models of phosphorus loading, retention and concentration vs. lake trophic state. *Hydrobiologia*, 170 (1): 285–303, 1988. https://doi.org/10.1007/BF00024910.

[3] Ahmed, A.A.M., Mustakim, S., and Shah, A. Application of adaptive neuro-fuzzy inference system (ANFIS) to estimate the biochemical oxygen demand (BOD) of Surma River. *Journal of King Saud University - Engineering Sciences*, 29 (3): 237–243, 2017. https://doi.org/10.1016/j.jksues.2015.02.001.

[4] Akkoyunlu, A., and Akiner, E.M. Feasibility Assessment of Data-Driven Models in Predicting Pollution Trends of Omerli Lake , Turkey. *Water Resour Manage*, 24: 3419–3436, 2010. https://doi.org/10.1007/s11269-010-9613-0.

[5] Al-Mukhtar, M., and Al-Yaseen, F. Modeling Water Quality Parameters Using Data-Driven Models, a Case Study Abu-Ziriq Marsh in South of Iraq. *Hydrology*, 6 (24): 1–17, 2019. https://doi.org/10.3390/hydrology6010024.

[6] Alnuwaiser, M.A., Javed, M.F., Khan, M.I., Ahmed, M.W., and Galal, A.M. Support vector regression and ANN approach for predicting the ground water quality. *Journal of the Indian Chemical Society*, 99 (7): 100538, 2022. https://doi.org/https://doi.org/10.1016/j.jics.2022.100538.

[7] Alvarez-Vázquez, L.J., Fernández, F.J., and Muñoz-Sola, R. Mathematical analysis of a three-dimensional eutrophication model. *Journal of Mathematical Analysis and Applications*, 349 (1): 135–155, 2009. https://doi.org/https://doi.org/10.1016/j.jmaa.2008.08.031.

[8] APHA. *Standard methods for the examination of water and waste water*. American Public Health Association, Washington, DC, 19th edition, 1995.

[9] Arhonditsis, G.B., and Brett, M.T. Eutrophication model for Lake Washington (USA): Part I. Model description and sensitivity analysis. *Ecological Modelling*, 187 (2): 140–178, 2005. https://doi.org/10.1016/j.ecolmodel.2005.01.040.

[10] Arhonditsis, G.B., and Brett, M.T. Eutrophication model for Lake Washington (USA): Part II—model calibration and system dynamics analysis. *Ecological Modelling*, 187 (2): 179–200, 2005. https://doi.org/10.1016/j.ecolmodel.2005.01.039.

[11] Aria, H.S., Asadollahfardi, G., and Heidarzadeh, N. Eutrophication modelling of Amirkabir Reservoir (Iran) using an artificial neural network approach. *Lakes &*

Reserv., 24 (1): 48–58, 2019. https://doi.org/10.1111/lre.12254.

[12] Barbieri, A., and Simona, M. Trophic evolution of Lake Lugano related to external load reduction: Changes in phosphorus and nitrogen as well as oxygen balance and biological parameters. *Lakes & Reservoirs: Science, Policy and Management for Sustainable Use*, 6 (1): 37–47, 2001. https://doi.org/https://doi.org/10.1046/j.1440-1770.2001.00120.x.

[13] Baruah, D., Baruah, D.C., and Hazarika, M.K. Biomass and Bioenergy Arti fi cial neural network based modeling of biomass gasification in fixed bed downdraft gasifiers. *Biomass and Bioenergy*, 98: 264–271, 2017. https://doi.org/10.1016/j.biombioe.2017.01.029.

[14] Basant, N., Gupta, S., Malik, A., and Singh, K.P. Linear and nonlinear modeling for simultaneous prediction of dissolved oxygen and biochemical oxygen demand of the surface water — A case study. *Chemometrics and Intelligent Laboratory Systems*, 104 (2): 172–180, 2010. https://doi.org/10.1016/j.chemolab.2010.08.005.

[15] Béjaoui, B., Solidoro, C., Harzallah, A., Chevalier, C., Chapelle, A., Zaaboub, N., and Aleya, L. 3D modeling of phytoplankton seasonal variation and nutrient budget in a southern Mediterranean Lagoon. *Marine pollution bulletin*, 114 (2): 962–976, 2017. https://doi.org/10.1016/j.marpolbul.2016.11.001.

[16] Bergström, A., Blomqvist, P., and Jansson, M. Effects of atmospheric N deposition on nutrient limitation and phytoplankton biomass in an unproductive Swedish lake. *Limnol. Oceanogr*., 50: 987–994, 2005. https://doi.org/10.4319/lo.2005.50.3.0987.

[17] Bruder, S., Babbar-Sebens, M., Tedesco, L., and Soyeux, E. Use of fuzzy logic models for prediction of taste and odor compounds in algal bloom-affected inland water bodies. *Environmental Monitoring and Assessment*, 186 (3): 1525–1545, 2014. https://doi.org/10.1007/s10661-013-3471-1.

[18] Bryhn, A., and Håkanson, L. A Comparison of Predictive Phosphorus Load-Concentration Models for Lakes. *Ecosystems*, 10: 1084–1099, 2007. https://doi.org/10.1007/s10021-007-9078-z.

[19] Cao, M., Alkayem, F.N., Pan, L., and Novak, D. Advanced Methods in Neural Networks-Based Sensitivity Analysis with their Applications in Civil Engineering. In Rosa, J.,L.,G., editor, *Artificial Neural Networks-Models and Applications*, pages 335–353. IntechOpen, London, 2016. https://doi.org/http://dx.doi.org/10.5772/64026.

[20] Carlson, R.E. A trophic state index for lakes. *Limnology and Ocenography*, 22 (2): 361–369, 1977.

[21] Carpenter, S.R., Caraco, N.F., Correll, D.L., Howarth, R.W., Sharpley, A.N., and Smith, V.H. Nonpoint Pollution Of Surface Waters With Phosphorus And

Nitrogen. *Ecological Applications*, 8 (3): 559–568, 1998. https://doi.org/https://doi.org/10.1890/1051-0761(1998)008[0559:NPOSWW]2.0.CO;2.

[22] Carpenter, S.R., and Lathrop, R.C. Probabilistic Estimate of a Threshold for Eutrophication. *Ecosystems*, 11 (4): 601–613, 2008. https://doi.org/10.1007/s10021-008-9145-0.

[23] Carruthers, T.J.B., Longstaff, B.J., Dennison, W.C., Abal, E.G., and Aioi, K. Chapter 19 - Measurement of light penetration in relation to seagrass. In Short, F.,T., and Coles, R.,G.,B.,T.,-G.,S.,R.,M., editors, *Global Seagrass Research Methods*, pages 369–392. Elsevier Science, Amsterdam, 2001. https://doi.org/https://doi.org/10.1016/B978-044450891-1/50020-7.

[24] Chandrashekar, J.S., Babu, L., and Somashekar, R.K. Impact of urbanization on Bellandur Lake, Bangalore- a case study. *Journal of Environmental Biology*, 24 (3): 223–227, 2003.

[25] Chapra, S.C., Dolan, D.M., and Dove, A. Mass-balance modeling framework for simulating and managing long-term water quality for the lower Great Lakes. *Journal of Great Lakes Research*, 42 (6): 1166–1173, 2016. https://doi.org/https://doi.org/10.1016/j.jglr.2016.04.008.

[26] Chapra, S.C., and Reckhow, K.H. Expressing the Phosphorus Loading Concept in Probabilistic Terms. *Journal of the Fisheries Research Board of Canada*, 36 (2): 225–229, 1979. https://doi.org/10.1139/f79-034.

[27] Chen, D., Lu, J., and Shen, Y. Artificial neural network modelling of concentrations of nitrogen, phosphorus and dissolved oxygen in a non-point source polluted river in Zhejiang Province, southeast China. *Hydrological Processes*, 24 (3): 290–299, 2010. https://doi.org/https://doi.org/10.1002/hyp.7482.

[28] Chen, M., Jin, X., Liu, Y., Guo, L., Ma, Y., Guo, C., Wang, F., and Xu, J. Human activities induce potential aquatic threats of micropollutants in Danjiangkou Reservoir, the largest artificial freshwater lake in Asia. *Science of The Total Environment*, 850: 157843, 2022. https://doi.org/10.1016/j.scitotenv.2022.157843.

[29] Chen, W., and Liu, W. Artificial neural network modeling of dissolved oxygen in reservoir. *Environ Monit Assess.*, 186: 1203–1217, 2014. https://doi.org/10.1007/s10661-013-3450-6.

[30] Chen, W., and Liu, W. Water Quality Modeling in Reservoirs Using Multivariate Linear Regression and Two Neural Network Models. *Advances in Artificial Neural Systems*, 2015: 1–12, 2015.

[31] Cheng, X., and Li, S. An analysis on the evolvement processes of lake eutrophication and their characteristics of the typical lakes in the middle and

lower reaches of Yangtze River. *Chinese Science Bulletin*, 51 (13): 1603–1613, 2006. https://doi.org/10.1007/s11434-006-2005-4.

[32] Chloupek, O., Hrstkova, P., and Schweigert, P. Yield and its stability, crop diversity, adaptability and response to climate change, weather and fertilisation over 75 years in the Czech Republic in comparison to some European countries. *Field Crops Research*, 85 (2): 167–190, 2004. https://doi.org/https://doi.org/10.1016/S0378-4290(03)00162-X.

[33] Chorus, I., and Bartram, J. *Toxic Cyanobacteria in Water : A guide to their public health consequences , monitoring and management*. Spon Press, Routledge, London, 1999.

[34] Coveney, M.F., Stites, D.L., Lowe, E.F., Battoe, L.E., and Conrow, R. Nutrient removal from eutrophic lake water by wetland filtration. *Ecological Engineering*, 19 (2): 141–159, 2002. https://doi.org/10.1016/S0925-8574(02)00037-X.

[35] Csábrági, A., Molnár, S., Tanos, P., and Kovács, J. Application of artificial neural networks to the forecasting of dissolved oxygen content in the Hungarian section of the river Danube. *Ecological Engineering*, 100: 63–72, 2017. https://doi.org/https://doi.org/10.1016/j.ecoleng.2016.12.027.

[36] Dave, D. Eutrophication in the Lakes of Udaipur city: A case study of Fateh Sagar Lake. In *International Conference on Biotechnology and Environment Management*, IACSIT Press, Singapore, 2011.

[37] Demuth, H.B., Beale, M.H., Jess, O. De, and Hagan, M.T. *Neural Network Design*. Martin Hagan 2014.

[38] Deo, R.C., and Samui, P. Forecasting Evaporative Loss by Least-Square Support-Vector Regression and Evaluation with Genetic Programming, Gaussian Process, and Minimax Probability Machine Regression: Case Study of Brisbane City. *Journal of Hydrologic Engineering*, 22 (6): 5017003, 2017. https://doi.org/10.1061/(ASCE)HE.1943-5584.0001506.

[39] Dillon, P.J., and Rigler, F.H. The phosphorus-chlorophyll relationship in lakes1,2. *Limnology and Oceanography*, 19 (5): 767–773, 1974. https://doi.org/https://doi.org/10.4319/lo.1974.19.5.0767.

[40] Dugan, H.A., Bartlett, S.L., Burke, S.M., Doubek, J.P., Krivak-Tetley, F.E., Skaff, N.K., Summers, J.C., Farrell, K.J., McCullough, I.M., Morales-Williams, A.M., et al. Salting our freshwater lakes. *Proceedings of the National Academy of Sciences*, 114 (17): 4453–4458, 2017. https://doi.org/10.1073/pnas.1620211114.

[41] Edmondson, W.T. Eutrophication in North America. In *Eutrophication: Causes, Consequences, Correctives (Proceedings from a Symposium)*, pages 124–149. National Academy of Sciences, Washington, DC, 1969.

[42] El-Shafie, A., Taha, M.R., and Noureldin, A. A neuro-fuzzy model for inflow

forecasting of the Nile river at Aswan high dam. *Water Resources Management*, 21: 533–556, 2007.

[43] Elbeltagi, A., Salam, R., Pal, S.C., Zerouali, B., Shahid, S., Mallick, J., Islam, M.S., and Islam, A.R.M.T. Groundwater level estimation in northern region of Bangladesh using hybrid locally weighted linear regression and Gaussian process regression modeling. *Theoretical and Applied Climatology*, 149 (1): 131–151, 2022. https://doi.org/10.1007/s00704-022-04037-0.

[44] Elkiran, G., Nourani, V., and Abba, S.I. Multi-step ahead modelling of river water quality parameters using ensemble artificial intelligence-based approach. *Journal of Hydrology*, 577: 123962, 2019. https://doi.org/https://doi.org/10.1016/j.jhydrol.2019.123962.

[45] Elliott, J. Predicting the impact of changing nutrient load and temperature on the phytoplankton of England's largest lake, Windermere. *Freshwater Biology*, 57 400–413, 2011. https://doi.org/10.1111/j.1365-2427.2011.02717.x.

[46] Elliott, J., Jones, I., and Page, T. The importance of nutrient source in determining the influence of retention time on phytoplankton: An explorative modelling study of a naturally well-flushed lake. *Hydrobiologia*, 627: 129–142, 2009. https://doi.org/10.1007/s10750-009-9720-1.

[47] Elliott, J. The seasonal sensitivity of Cyanobacteria and other phytoplankton to changes in flushing rate and water temperature. *Global Change Biology*, 16: 864–876, 2009. https://doi.org/10.1111/j.1365-2486.2009.01998.x.

[48] Elser, J.J., Marzolf, E.R., and Goldman, C.R. Phosphorus and nitrogen limitation of phytoplankton growth in the freshwaters of North America: A review and critique of experimental enrichments. *Canadian Journal of Fisheries and Aquatic Sciences*, 47 (7): 1468–1477, 1990. https://doi.org/10.1139/f90-165.

[49] Emamgholizadeh, S., Kashi, H., Marofpoor, I., and Zalaghi, E. Prediction of water quality parameters of Karoon River (Iran) by artificial intelligence-based models. *International Journal of Environmental Science and Technology*, 11 (3): 645–656, 2014. https://doi.org/10.1007/s13762-013-0378-x.

[50] ENVIS Centre: Assam. *Status of Environment and Related Issues, Ministry of Environment, Forests & Climate Change, Govt of India*. Retrieved on 6 Aug 2018 from http://asmenvis.nic.in/KidsCentre/Wetlands_1375.aspx.

[51] Fan, J., Wu, J., Kong, W., Zhang, Y., Li, M., Zhang, Y., Meng, W., and Zhang, A.M. Predicting Bio-indicators of Aquatic Ecosystems Using the Support Vector Machine Model in the Taizi River, China. *Sustainability*, 9 (6): 2017. https://doi.org/10.3390/su9060892.

[52] García-Nieto, P.J., García-Gonzalo, E., Alonso Fernández, J.R., and Díaz Muñiz, C. A New Predictive Model for Evaluating Chlorophyll-a Concentration in Tanes Reservoir by Using a Gaussian Process Regression. *Water Resources*

Management, 34 (15): 4921–4941, 2020. https://doi.org/10.1007/s11269-020-02699-x.

[53] García-Nieto, P.J., García-Gonzalo, E., Alonso Fernández, J.R., and Díaz Muñiz, C. Predictive modelling of eutrophication in the Pozón de la Dolores lake (Northern Spain) by using an evolutionary support vector machines approach. *Journal of mathematical biology*, 76 (4): 817–840, 2018. https://doi.org/10.1007/s00285-017-1161-2.

[54] García Nieto, P.J., García-Gonzalo, E., Alonso Fernández, J.R., and Díaz Muñiz, C. Water eutrophication assessment relied on various machine learning techniques: A case study in the Englishmen Lake (Northern Spain). *Ecological Modelling*, 404: 91–102, 2019. https://doi.org/10.1016/j.ecolmodel.2019.03.009.

[55] Garg, J., and Garg, H.K. Nutrient loading and its consequences in a lake ecosystem. *Tropical Ecology*, 43, 2002.

[56] Gazzaz, N.M., Yusoff, M.K., Aris, A.Z., Juahir, H., and Ramli, M.F. Artificial neural network modeling of the water quality index for Kinta River (Malaysia) using water quality variables as predictors. *Marine Pollution Bulletin*, 64 (11): 2409–2420, 2012. https://doi.org/10.1016/j.marpolbul.2012.08.005.

[57] Gulati, R., and Donk, E. Lakes in the Netherlands, their origin, eutrophication and restoration: State-of-the-art review. *Hydrobiologia*, 478: 73–106, 2002. https://doi.org/10.1023/A:1021092427559.

[58] Gurkan, Z., Zhang, J., and Erik, S. Development of a structurally dynamic model for forecasting the effects of restoration of Lake Fure , Denmark. *Ecological Modelling*, 97: 89–102, 2006. https://doi.org/10.1016/j.ecolmodel.2006.03.006.

[59] Hadjisolomou, E., Stefanidis, K., Herodotou, H., Michaelides, M., Papatheodorou, G., and Papastergiadou, E. Modelling Freshwater Eutrophication with Limited Limnological Data Using Artificial Neural Networks. *Water*, 13 (11): 1590, 2021. https://doi.org/10.3390/w13111590.

[60] Haghiabi, A.H., Nasrolahi, A.H., and Parsaie, A. Water quality prediction using machine learning methods. *Water Quality Research Journal*, 53 (1): 3–13, 2018. https://doi.org/10.2166/wqrj.2018.025.

[61] Hakanson, L. *Water pollution : methods and criteria to rank, model and remediate chemical threats to aquatic ecosystems*. Backhuys Publishers, Leiden, The Netherlands, 1999.

[62] Håkanson, L., and Boulion, V. V *The Lake Foodweb - modelling predation and abiotic/biotic interactions.* Backhuys Publishers, Leiden, Department of Earth Sciences, Teknisk-naturvetenskapliga vetenskapsområdet, Uppsala University, 2002.

[63] Håkanson, L., and Bryhn, A.C. A Dynamic Mass-balance Model for Phosphorus

in Lakes with a Focus on Criteria for Applicability and Boundary Conditions. *Water, Air, and Soil Pollution*, 187 (1): 119–147, 2008. https://doi.org/10.1007/s11270-007-9502-1.

[64] Haykin, S. *Neural Networks - A Comprehensive Foundation*. Prentice-Hall, Inc., 3rd edition, 2007.

[65] Hecky, R., Smith, R., Barton, D., Guildford, S., Taylor, W., Charlton, M., and T.D., H. The nearshore phosphorus shunt: A consequence of ecosystem engineering by dreissenids in the Laurentian Great Lakes. *Canadian Journal of Fisheries and Aquatic Sciences - CAN J FISHERIES AQUAT SCI*., 61: 1285–1293, 2004. https://doi.org/10.1139/f04-065.

[66] Hecky, R.E., and Kilham, P. Nutrient limitation of phytoplankton in freshwater and marine environments: A review of recent evidence on the effects of enrichment1. *Limnology and Oceanography*, 33 (4part2): 796–822, 1988. https://doi.org/https://doi.org/10.4319/lo.1988.33.4part2.0796.

[67] Heddam, S. Modeling hourly dissolved oxygen concentration (DO) using two different adaptive neuro-fuzzy inference systems (ANFIS): a comparative study. *Environmental Monitoring and Assessment*, 186 (1): 597–619, 2014. https://doi.org/10.1007/s10661-013-3402-1.

[68] Heddam, S. Secchi Disk Depth Estimation from Water Quality Parameters : Artificial Neural Network versus Multiple Linear Regression Models ? *Environmental Processes*, 3: 525–536, 2016. https://doi.org/10.1007/s40710-016-0144-4.

[69] Huo, S., He, Z., Su, J., Xi, B., Zhang, L., and Fengyu, Z. Prediction of lake eutrophication using artificial neural networks. *International Journal of Environment and Pollution*, 56 (1): 63–78, 2014. https://doi.org/10.1016/j.proenv.2013.04.040.

[70] Huo, S., He, Z., Su, J., Xi, B., Zhang, L., and Zan, F. Prediction of lake eutrophication using artificial neural networks. *International Journal of Environment and Pollution*, 56 (1–4): 63–78, 2014. https://doi.org/10.1504/IJEP.2014.067677.

[71] Huo, S., He, Z., Su, J., Xi, B., and Zhu, C. Using artificial neural network models for eutrophication prediction. *Procedia Environmental Sciences*, 18: 310–316, 2013. https://doi.org/10.1016/j.proenv.2013.04.040.

[72] ILEC/Lake Biwa Research Institute. *Data Book of the World Lake Environments: A Survey of the State of the State of World Lakes*. Otsu and United Nations Environment Programme, Nairobi, 1993.

[73] Jang, J.-S. R. Anfis: Adaptive-Network-Based Fuzzy Inference System. *IEEE Transactions on Systems, Man and Cybernetics*, 23 (3): 665–685, 1993.

[74] Jensen, J., Pedersen, A., Jeppesen, E., and Søndergaard, M. An empirical model describing the seasonal dynamics of phosphorus in 16 shallow eutrophic lakes after external loading reduction. *Limnology and Oceanography*, 51: 791–800, 2006. https://doi.org/10.4319/lo.2006.51.1_part_2.0791.

[75] Jeppesen, E., Søndergaard, M., Kronvang, B., Jensen, J.P., Svendsen, L.M., and Lauridsen, T.L. Lake and catchment management in Denmark. In *The Ecological Bases for Lake and Reservoir Management: Proceedings of the Ecological Bases for Management of Lakes and Reservoirs Symposium, held 19–22 March 1996, Leicester, United Kingdom*, pages 419–432. Springer 1999.

[76] Jha, P., and Barat, S. Hydrobiological study of lake Mirik in Darjeeling Himalayas. *Journal of environmental biology*, 24 (3): 339–344, 2003.

[77] Jimeno-Sáez, P., Senent-Aparicio, J., Cecilia, J.M., and Pérez-Sánchez, J. Using Machine-Learning Algorithms for Eutrophication Modeling: Case Study of Mar Menor Lagoon (Spain). *International journal of environmental research and public health*, 17 (4): 2020. https://doi.org/10.3390/ijerph17041189.

[78] Jin, K.-R., Ji, Z.-G., and James, R. Three-dimensional Water Quality and SAV Modeling of a Large Shallow Lake. *Journal of Great Lakes Research*, 33: 28–45, 2007. https://doi.org/10.3394/0380-1330(2007)33[28:TWQASM]2.0.CO;2.

[79] Jin, X., Xu, Q., and Huang, C. Current status and future tendency of lake eutrophication in China. *Science in China. Series C, Life sciences*, 48 (Suppl 2): 948–954, 2005. https://doi.org/10.1007/BF03187133.

[80] Jinchuan, K., and Xinzhe, L. Empirical Analysis of Optimal Hidden Neurons in Neural Network Modeling for Stock Prediction. In *IEEE Pacific-Asia Workshop on Computational Intelligence and Industrial Application*, pages 828–832. 2008. https://doi.org/10.1109/PACIIA.2008.363.

[81] Jones, J., and Bachmann, R.W. Prediction of Phosphorus and Chlorophyll Levels in Lakes. *Journal of the Water Pollution Control Federation*, 48: 2176–2182, 1976.

[82] Jordan, W.R., Gilpin, M.E., and Aber, J.D. *Restoration Ecology: A Synthetic Approach to Ecological Research*. Cambridge University Press, 1987.

[83] Kane, D., Gordon, S., Munawar, M., Charlton, M., and Culver, D. The Planktonic Index of Biotic Integrity (P-IBI): An approach for assessing lake ecosystem health. *Ecological Indicators*, 9: 1234–1247, 2009. https://doi.org/10.1016/j.ecolind.2009.03.014.

[84] Karul, C., Soyupak, S., Cilesiz, F.A., Akbay, N., and Germen, E. Case studies on the use of neural networks in eutrophication modeling. *Ecological Modelling*, 134: 145–152, 2000.

[85] Karul, C., Soyupak, S., and Yuteri, C. Neural network models as a management

tool in lakes. *Hydrobiologia*, 408/409: 139–144, 1999.

[86] Khan, F., and Ansari, A. Eutrophication: An Ecological Vision. *Botanical Review*, 71: 449–482, 2005. https://doi.org/10.1663/0006-8101(2005)071[0449:EAEV]2.0.CO;2.

[87] Khoshnevisan, B., Rafiee, S., and Mousazadeh, H. Application of multi-layer adaptive neuro-fuzzy inference system for estimation of greenhouse strawberry yield. *Measurement*, 47: 903–910, 2014. https://doi.org/https://doi.org/10.1016/j.measurement.2013.10.018.

[88] Kirchner, W.B., and Dillon, P.J. An Empirical Method of Estimating the Retention of Phosphorus in Lakes. *Water Resources Research*, 11: 182–183, 1975. https://doi.org/10.1029/WR011i001p00182.

[89] Koussouris, T., Diapoulis, A., Bertahas, I., and Photis, G. Evaluating trophic status and restoration procedures of a polluted lake, Lake Kastoria, Greece. *GeoJournal*, 23 (2): 153–161, 1991. https://doi.org/10.1007/BF00241400.

[90] Kovačević, M., Ivanišević, N., Dašić, T., and Marković, L. Application of artificial neural networks for hydrological modelling in karst. *Građevinar*, 70 (01): 1–10, 2018. https://doi.org/DOI: 10.14256/JCE.1594.2016.

[91] Kroes, H.W. Replacement of phosphates in detergents. *Hydrobiological Bulletin*, 14 (1): 90–93, 1980. https://doi.org/10.1007/BF02260276.

[92] Kuo, J., Hsieh, M., Lung, W., and She, N. Using artificial neural network for reservoir eutrophication prediction. *Ecological Modelling*, 200: 171–177, 2007. https://doi.org/10.1016/j.ecolmodel.2006.06.018.

[93] Larsen, D.P., and Mercier, H.T. Phosphorus Retention Capacity of Lakes. *Journal of the Fisheries Research Board of Canada*, 33 (8): 1742–1750, 1976. https://doi.org/10.1139/f76-221.

[94] Latif, S.D., Birima, A.H., Ahmed, A.N., Hatem, D.M., Al-Ansari, N., Fai, C.M., and El-Shafie, A. Development of prediction model for phosphate in reservoir water system based machine learning algorithms. *Ain Shams Engineering Journal*, 13 (1): 101523, 2022. https://doi.org/https://doi.org/10.1016/j.asej.2021.06.009.

[95] Lee, S., Ryu, J.-H., Lee, M.-J., and Won, J.-S. Use of an artificial neural network for analysis of the susceptibility to landslides at Boun , Korea. *Environmental Geology*, 44: 820–833, 2003. https://doi.org/10.1007/s00254-003-0825-y.

[96] Lek, S., and Guegan, J.F. Artificial neural networks as a tool in ecological modelling , an introduction. *Ecological Modelling*, 120: 65–73, 1999.

[97] Lewtas, K., Paterson, M., Venema, H.D., and Roy, D. Manitoba Prairie Lakes: Eutrophication and In-Lake Remediation Treatments. *International Institute for Sustainable Development: Winnipeg, Canada*, 2: 2237–2248, 2015.

[98] Li-kun, Y., Sen, P., Xin-hua, Z., and Xia, L. Development of a two-dimensional eutrophication model in an urban lake (China) and the application of uncertainty analysis. *Ecological Modelling*, 345: 63–74, 2017. https://doi.org/https://doi.org/10.1016/j.ecolmodel.2016.11.014.

[99] Li, J., Chow, T.W.S., and Yu, Y.-L. The Estimation Theory and Optimization Algorithm for the Number of Hidden Units in the Higher-order Feed forward Neural Network. In *Proceedings of the IEEE International Conference on Neural Networks*, pages 1229–1233. 1995.

[100] Li, J.X., and Liao, W.G. Discussion on the synthetic adjustive guidelines for the prevention and cure of eutrophication. *Protection of Water Resource*, 2 (5): 4–5, 2002.

[101] Li, X., Yuan, C., Li, X., and Wang, Z. State of health estimation for Li-Ion battery using incremental capacity analysis and Gaussian process regression. *Energy*, 190: 116467, 2020. https://doi.org/10.1016/j.energy.2019.116467.

[102] Li, Y., Acharya, K., and Yu, Z. Modeling impacts of Yangtze River water transfer on water ages in Lake Taihu. *China. Ecol Eng*., 37: 325–334, 2010.

[103] Likun, Y., Sen, P., Xin-hua, Z., and Xia, L. Development of a two-dimensional eutrophication model in an urban lake (China) and the application of uncertainty analysis. *Ecological Modelling*, 345: 63–74, 2017. https://doi.org/10.1016/j.ecolmodel.2016.11.014.

[104] Lindim, C., Becker, A., Grüneberg, B., and Fischer, H. Modelling the effects of nutrient loads reduction and testing the N and P control paradigm in a German shallow lake. *Ecological Engineering*, 82: 415–427, 2015. https://doi.org/https://doi.org/10.1016/j.ecoleng.2015.05.009.

[105] Liu, X., Al-Shaibah, B., Zhao, C., Tong, Z., Bian, H., Zhang, F., Zhang, J., and Pei, X. Estimation of the Key Water Quality Parameters in the Surface Water, Middle of Northeast China, Based on Gaussian Process Regression. *Remote Sensing*, 14 (24): 6323, 2022. https://doi.org/10.3390/rs14246323.

[106] Lourakis, M., and Argyros, A. Is Levenberg-Marquardt the Most Efficient Optimization Algorithm for Implementing Bundle Adjustment?. In *Proceedings of the Tenth IEEE International Conference on Computer Vision*, pages 1526–1531. 2005. https://doi.org/10.1109/ICCV.2005.128.

[107] Lowery, T.A. Modelling estuarine eutrophication in the context of hypoxia, nitrogen loadings, stratification and nutrient ratios. *Journal of Environmental Management*, 52 (3): 289–305, 1998. https://doi.org/https://doi.org/10.1006/jema.1998.0180.

[108] Lu, F., Chen, Z., Liu, W., and Shao, H. Modeling chlorophyll-a concentrations using an artificial neural network for precisely eco-restoring lake basin. *Ecological Engineering*, 95: 422–429, 2016.

https://doi.org/https://doi.org/10.1016/j.ecoleng.2016.06.072.

[109] Luo, H.-J., Liu, D.-F., and Huang, Y.-P. Support vector regression model of chlorophyll-a during spring algal bloom in xiangxi bay of three gorges reservoir, China. *Journal of Environmental Protection*, 3 (5): 420–425, 2012. https://doi.org/10.4236/jep.2012.35052.

[110] Luo, W., Zhu, S., Wu, S., and Dai, J. Comparing artificial intelligence techniques for chlorophyll-a prediction in US lakes. *Environmental Science and Pollution Research*, 26 (29): 30524–30532, 2019. https://doi.org/10.1007/s11356-019-06360-y.

[111] Ly, Q.V., Nguyen, X.C., Lê, N.C., Truong, T.-D., Hoang, T.-H.T., Park, T.J., Maqbool, T., Pyo, J., Cho, K.H., Lee, K.-S., et al. Application of Machine Learning for eutrophication analysis and algal bloom prediction in an urban river: A 10-year study of the Han River, South Korea. *Science of The Total Environment*, 797: 149040, 2021. https://doi.org/https://doi.org/10.1016/j.scitotenv.2021.149040.

[112] Maier, H.R., Jain, A., Dandy, G.C., and Sudheer, K.P. Environmental Modelling & Software Methods used for the development of neural networks for the prediction of water resource variables in river systems : Current status and future directions. *Environmental Modelling and Software*, 25 (8): 891–909, 2010. https://doi.org/10.1016/j.envsoft.2010.02.003.

[113] Maier, H.R., Dandy, G.C., and Burch, M.D. Use of artificial neural networks for modelling cyanobacteria Anabaena spp . in the River Murray , South Australia. *Ecological Modelling*, 105: 257–272, 1998.

[114] Makarewicz, J.C., and Bertram, P. Evidence for the Restoration of the Lake Erie Ecosystem. *Bioscience*, 41 (4): 1991.

[115] Malmaeus, M., and Håkanson, L. A dynamic model to predict suspended particulate matter in lakes. *Ecological Modelling*, 167: 247–262, 2003. https://doi.org/10.1016/S0304-3800(03)00166-2.

[116] Mellios, N., Papadimitriou, T., and Laspidou, C. Predictive modeling of microcystin concentrations in a hypertrophic lake by means of Adaptive Neuro Fuzzy Inference System (ANFIS). *European Water*, 55: 91–103, 2016.

[117] Misra, A.K. Mathematical Modeling and Analysis of Eutrophication of Water Bodies Caused by Nutrients. *Nonlinear Anal. Model. Cont*, 12: 511–524, 2007. https://doi.org/10.15388/NA.2007.12.4.14683.

[118] Mukaka, M.M. Statistics corner: A guide to appropriate use of correlation coefficient in medical research. *Malawi medical journal : the journal of Medical Association of Malawi*, 24 (3): 69–71, 2012.

[119] Mukherjee, B., Mukherjee, D., and Nivedita, M. Modelling carbon and nutrient cycling in a simulated pond system at Ranchi. *Ecological Modelling*, 213 (3): 437–448, 2008. https://doi.org/https://doi.org/10.1016/j.ecolmodel.2008.01.013.

[120] Naghibi, S.A., Ahmadi, K., and Daneshi, A. Application of Support Vector Machine, Random Forest, and Genetic Algorithm Optimized Random Forest Models in Groundwater Potential Mapping. *Water Resources Management*, 31 (9): 2761–2775, 2017. https://doi.org/10.1007/s11269-017-1660-3.

[121] Najah, A., Karim, O.A., and El-shafie, A.H. Performance of ANFIS versus MLP-NN dissolved oxygen prediction models in water quality monitoring. *Environ Sci Pollut Res*, 21: 1658–1670, 2014. https://doi.org/10.1007/s11356-013-2048-4.

[122] Najah, A., Elshafie, A., Karim, O.A., and Jaffar, O. Prediction of Johor River water quality parameters using artificial neural networks. *European Journal of scientific research*, 28 (3): 422–435, 2009.

[123] Najwa Mohd Rizal, N., Hayder, G., Mnzool, M., Elnaim, B.M.E., Mohammed, A.O., and Khayyat, M.M. Comparison between Regression Models, Support Vector Machine (SVM), and Artificial Neural Network (ANN) in River Water Quality Prediction. *Processes*, 10:1652, 2022.. https://doi.org/10.3390/pr10081652.

[124] Narain, S., Srinivasa, R.K., Pandey, P., Banerjee, S., and Chaudhuri, J. *Excreta Matters: How urban India is soaking up water, polluting rivers and drowning in its own waste*. Centre for Science and Environment, 2012.

[125] Nash, J.E., and Sutcliffe, J. V River flow forecasting through conceptual models Part I - A discussion of principles. *Journal of Hydrology*, 10: 282–290, 1970.

[126] Nhapi, I. *Options for wastewater management in Harare*, Zimbabwe. PhD Thesis, Wageningen University and Research, Netherlands, 2004.

[127] Nicholls, K., and Dillon, P. An Evaluation of Phosphorus-Chlorophyll-Phytoplankton Relationships for Lakes. *Internationale Revue der gesamten Hydrobiologie und Hydrographie*, 63: 141–154, 1978. https://doi.org/10.1002/iroh.19780630203.

[128] Nouraki, A., Alavi, M., Golabi, M., and Albaji, M. Prediction of water quality parameters using machine learning models: a case study of the Karun River, Iran. *Environmental Science and Pollution Research*, 28 (40): 57060–57072, 2021. https://doi.org/10.1007/s11356-021-14560-8.

[129] Nurnberg, G. The prediction of internal phosphorus load in lakes with anoxic hypolimnia. *Limnology and Oceanography*, 29: 111–124, 1984. https://doi.org/10.4319/lo.1984.29.1.0111.

[130] Ostrofsky, M. Trophic Changes in Reservoirs; An Hypothesis Using Phosphorus Budget Models. *Internationale Revue der gesamten Hydrobiologie und Hydrographie*, 63: 481–499, 1978. https://doi.org/10.1002/iroh.19780630403.

[131] Page, T., Smith, P.J., Beven, K.J., Jones, I.D., Elliott, J.A., Maberly, S.C., Mackay, E.B., De Ville, M., and Feuchtmayr, H. Constraining uncertainty and process-representation in an algal community lake model using high frequency in-lake observations. *Ecological Modelling*, 357: 1–13, 2017. https://doi.org/https://doi.org/10.1016/j.ecolmodel.2017.04.011.

[132] Palani, S., Liong, S.-Y., and Tkalich, P. An ANN application for water quality forecasting. *Marine Pollution Bulletin*, 56 (9): 1586–1597, 2008. https://doi.org/https://doi.org/10.1016/j.marpolbul.2008.05.021.

[133] Park, Y., Cho, K.H., Park, J., Cha, S.M., and Kim, J.H. Development of early-warning protocol for predicting chlorophyll-a concentration using machine learning models in freshwater and estuarine reservoirs, Korea. *Science of The Total Environment*, 502: 31–41, 2015. https://doi.org/https://doi.org/10.1016/j.scitotenv.2014.09.005.

[134] Parma, S. The history of the eutrophication concept and the eutrophication in the Netherlands. *Hydrobiological Bulletin*, 14 (1): 5–11, 1980. https://doi.org/10.1007/BF02260267.

[135] Pathak, H., and Pathak, D. Eutrophication: Impact of Excess Nutrient Status in Lake Water Ecosystem. *Journal of Environmental & Analytical Toxicology*, 02: 2012. https://doi.org/10.4172/2161-0525.1000148.

[136] Pelechaty, M., Machowiak, D., Kostrzewski, A., and Siwecki, R. The diversity and quality of the dominant types of habitats of the Jaroslawieckie Lake due to perennial changes of micro-and macrophytes. *Morena-Prau-Wielkopolskiego-Parku-Narodowego*, 5: 53–59, 1997.

[137] Perhar, G., Arhonditsis, G.B., and Brett, M.T. Modeling zooplankton growth in Lake Washington: A mechanistic approach to physiology in a eutrophication model. *Ecological Modelling*, 258: 101–121, 2013. https://doi.org/https://doi.org/10.1016/j.ecolmodel.2013.02.024.

[138] Pham, Q.B., Mohammadpour, R., Linh, N.T.T., Mohajane, M., Pourjasem, A., Sammen, S.S., Anh, D.T., and Nam, V.T. Application of soft computing to predict water quality in wetland. *Environmental Science and Pollution Research*, 28 (1): 185–200, 2021. https://doi.org/10.1007/s11356-020-10344-8.

[139] Pradhan, B. A comparative study on the predictive ability of the decision tree, support vector machine and neuro-fuzzy models in landslide susceptibility mapping using GIS. *Computers & Geosciences*, 51: 350–365, 2013. https://doi.org/https://doi.org/10.1016/j.cageo.2012.08.023.

[140] Prepas, E.E., and Charette, T. 9.08 - Worldwide Eutrophication of Water Bodies: Causes, Concerns, Controls. In Holland, H.,D., and Turekian, K.,K., editors, *Treatise on Geochemistry*, pages 311–331. Pergamon, Oxford, 2003. https://doi.org/https://doi.org/10.1016/B0-08-043751-6/09169-6.

[141] Qin, B.-Q., Gao, G., Zhu, G., Zhang, Y., Song, Y., Tang, X., Xu, H., and Deng, J. Lake eutrophication and its ecosystem response. Chinese Science Bulletin, 58, 2012. https://doi.org/10.1007/s11434-012-5560-x.

[142] Rankovic, V., Radulovic, J., Radojevic, I., Ostojic, A., and Comic, L. Prediction of dissolved oxygen in reservoirs using adaptive network-based fuzzy inference system. *Journal of Hydrodynamics*, 14 (1): 167–179, 2012. https://doi.org/10.2166/hydro.2011.084.

[143] Rasmussen, C.E. Gaussian Processes in Machine Learning. In *Summer school on machine learning*, pages 63-71, Springer, Berlin, Heidelberg, 2003.

[144] Rasmussen, C.E., and Williams, C.K.I. *Gaussian Processes for Machine Learning*. The MIT Press 2005. https://doi.org/10.7551/mitpress/3206.001.0001.

[145] Rast, W., and Thornton, J.A. Trends in eutrophication research and control. *Hydrological Processes*, 10: 295–313, 1996.

[146] Rehman, F., Cheema, T., Lisa, M., Azeem, T., Rehman, S., Naseem, A., and Khan, Z. Statistical analysis tools for the assessment of groundwater chemical variations in Wadi Bani Malik area, Saudi Arabia. *GlobalNEST International Journal*, 20: 355–362, 2018. https://doi.org/10.30955/gnj.002237.

[147] Reutter, J.M. Lake Erie: Phosphorus and Eutrophication. Technical Report *Fact Sheet 015, Ohio Sea Grant College Program*, Columbus, 1989.

[148] Richardson, C.J., King, R.S., Qian, S.S., Vaithiyanathan, P., Qualls, R.G., and Stow, C.A. Estimating Ecological Thresholds for Phosphorus in the Everglades.

Environmental Science & Technology, 41 (23): 8084–8091, 2007. https://doi.org/10.1021/es062624w.

[149] Riley, J.P., and Chester, R. *Introduction to marine chemistry*. Academic Press, London, 1971. https://doi.org/LK - https://worldcat.org/title/1150040170.

[150] Rohde, W. Crystallization of eutrophication concepts in northern Europe. In *Eutrophication: Causes, consequences, correctives*, pages 50–64. Natl. Acad. Sci., WASHINGTON D.C, 1969.

[151] Romero, J.R., Kagalou, I., Imberger, J., Hela, D., Kotti, M., Bartzokas, A., Albanis, T., Evmirides, N., Karkabounas, S., Papagiannis, J., et al. Seasonal water quality of shallow and eutrophic Lake Pamvotis, Greece: implications for restoration. *Hydrobiologia*, 474 (1): 91–105, 2002. https://doi.org/10.1023/A:1016569124312.

[152] Rucinski, D.K., DePinto, J. V, Beletsky, D., and Scavia, D. Modeling hypoxia in the central basin of Lake Erie under potential phosphorus load reduction scenarios. *Journal of Great Lakes Research*, 42 (6): 1206–1211, 2016. https://doi.org/https://doi.org/10.1016/j.jglr.2016.07.001.

[153] Ruley, J.E., and Rusch, K.A. An assessment of long-term post-restoration water quality trends in a shallow, subtropical, urban hypereutrophic lake. *Ecological Engineering*, 19 (4): 265–280, 2002. https://doi.org/https://doi.org/10.1016/S0925-8574(02)00096-4.

[154] Saghi, H., Karimi, A., and Javid, A, H. Investigation on trophic state index by artificial neural networks (case study : Dez Dam of Iran). *Appl Water Sci*, 5: 127–136, 2015. https://doi.org/10.1007/s13201-014-0161-2.

[155] Sahoo, B.B., Jha, R., Singh, A., and Kumar, D. Application of Support Vector Regression for Modeling Low Flow Time Series. *KSCE Journal of Civil Engineering*, 23 (2): 923–934, 2019. https://doi.org/10.1007/s12205-018-0128-1.

[156] Sakamoto, M. Primary production by phytoplankton community in some Japanese lakes and its dependence on lake depth. *Archiv Fur Hydrobiologie*, 62: 1–28, 1966.

[157] Sanikhani, H., Kisi, O., Kiafar, H., and Ghavidel, S.Z.Z. Comparison of Different Data-Driven Approaches for Modeling Lake Level Fluctuations: The Case of Manyas and Tuz Lakes (Turkey). *Water Resources Management*, 29 (5): 1557–1574, 2015. https://doi.org/10.1007/s11269-014-0894-6.

[158] Sarkar, A., and Pandey, P. River Water Quality Modelling Using Artificial Neural Network Technique. *Aquatic Procedia*, 4: 1070–1077, 2015. https://doi.org/https://doi.org/10.1016/j.aqpro.2015.02.135.

[159] Saxena, P.K., Jabeen, S.J., and Sahai, R. Variation in certain physico-chemical characteristics of freshwater stream receiving industrial effluents. *Geobios*, 1988.

[160] Scavia, D., David Allan, J., Arend, K.K., Bartell, S., Beletsky, D., Bosch, N.S., Brandt, S.B., Briland, R.D., Daloğlu, I., DePinto, J. V, et al. Assessing and addressing the re-eutrophication of Lake Erie: Central basin hypoxia. *Journal of Great Lakes Research*, 40 (2): 226–246, 2014. https://doi.org/https://doi.org/10.1016/j.jglr.2014.02.004.

[161] Scheffer, M., Carpenter, S., Foley, J.A., Folke, C., and Walker, B. Catastrophic shifts in ecosystems. *Nature*, 413 (6856): 591–596, 2001. https://doi.org/10.1038/35098000.

[162] Schelske, C.L. Assessment of nutrient effects and nutrient limitation in lake okeechobee. *JAWRA Journal of the American Water Resources Association*, 25 (6): 1119–1130, 1989. https://doi.org/https://doi.org/10.1111/j.1752-1688.1989.tb01325.x.

[163] Schindler, D.W., Hecky, R.E., Findlay, D.L., Stainton, M.P., Parker, B.R., Paterson, M.J., Beaty, K.G., Lyng, M., and Kasian, S.E.M. Eutrophication of lakes cannot be controlled by reducing nitrogen input: Results of a 37-year whole-ecosystem experiment. *Proceedings of the National Academy of Sciences*, 105 (32): 11254–11258, 2008. https://doi.org/10.1073/pnas.0805108105.

[164] Schindler, D.W. Evolution of phosphorus limitation in lakes: natural mechanisms compensate for deficiencies of nitrogen and carbon in eutrophied lakes. *Science*, 195 (4275): 260–262, 1977.

[165] Schindler, D.W. Recent advances in the understanding and management of eutrophication. *Limnology and Oceanography*, 51 (1part2): 356–363, 2006. https://doi.org/https://doi.org/10.4319/lo.2006.51.1_part_2.0356.

[166] Serrano, L., Reina, M., Quintana, X.D., Romo, S., Olmo, C., Soria, J.M., Blanco, S., Fernández-Aláez, C., Fernández-Aláez, M., Caria, M.C., et al. A new tool for the assessment of severe anthropogenic eutrophication in small shallow water bodies. *Ecological Indicators*, 76: 324–334, 2017. https://doi.org/https://doi.org/10.1016/j.ecolind.2017.01.034.

[167] Sheela, K.G., and Deepa, S.N. Review on Methods to Fix Number of Hidden Neurons in Neural Networks. *Mathematical Problems in Engineering*, 2013: 1–11, 2013. https://doi.org/http://dx.doi.org/10.1155/2013/425740.

[168] Shibata, K., and Ikeda, Y. Effect of number of hidden neurons on learning in large-scale layered neural networks. In *Proceedings of the ICROS-SICE International Joint Conference 2009 (ICCASSICE '09)*, pages 5008–5013. 2009.

[169] Shukla, J.B., Misra, A.K., and Chandra, P. Mathematical modeling and analysis of the depletion of dissolved oxygen in eutrophied water bodies affected by organic pollutants. *Nonlinear Analysis: Real World Applications*, 9 (5): 1851–1865, 2008. https://doi.org/https://doi.org/10.1016/j.nonrwa.2007.05.016.

[170] Singh, A., Nagar, J., Sharma, S., and Kotiyal, V. A Gaussian process regression approach to predict the k-barrier coverage probability for intrusion detection in wireless sensor networks. *Expert Systems with Applications*, 172: 114603, 2021. https://doi.org/https://doi.org/10.1016/j.eswa.2021.114603.

[171] Singh, A.P., Dhadse, K., and Ahalawat, J. Managing water quality of a river using an integrated geographically weighted regression technique with fuzzy decision-making model. *Environmental Monitoring and Assessment*, 191 (6): 378, 2019. https://doi.org/10.1007/s10661-019-7487-z.

[172] Singh, K.P., Basant, A., Malik, A., and Jain, G. Artificial neural network modeling of the river water quality — A case study. *Ecological Modelling*, 220: 888–895, 2009. https://doi.org/10.1016/j.ecolmodel.2009.01.004.

[173] Singh, K.P., Basant, N., and Gupta, S. Support vector machines in water quality management. *Analytica Chimica Acta*, 703 (2): 152–162, 2011. https://doi.org/https://doi.org/10.1016/j.aca.2011.07.027.

[174] Singh, R., Kainthola, A., and Singh, T.. Estimation of elastic constant of rocks using an ANFIS approach. *Appl. Soft Comput*, 12 (1): 40–45, 2012.

[175] Sinshaw, A.T., Surbeck, Q.S.C., Hakan, Y., and Yacoub, N. Artificial Neural Network for Prediction of Total Nitrogen and Phosphorus in US Lakes. *Journal of Environmental Engineering*, 145 (6): 4019032, 2019. https://doi.org/10.1061/(ASCE)EE.1943-7870.0001528.

[176] Smith, V.H. Cultural Eutrophication of Inland, Estuarine, and Coastal Waters. In Pace, M.L., Groffman, P.M., editors, *Successes, Limitations, and Frontiers in Ecosystem Science*. Springer, New York, 1998. https://doi.org/10.1007/978-1-4612-1724-4_2.

[177] Smith, V.H., Tilman, G.D., and Nekola, J.C. Eutrophication : impacts of excess nutrient inputs on freshwater , marine , and terrestrial ecosystems. *Environmental Pollution*, 100: 179–196, 1999.

[178] Smith, V.H., and Schindler, D.W. Eutrophication science: where do we go from here. *Trends in Ecology & Evolution*, 24 (4): 201–207, 2009. https://doi.org/https://doi.org/10.1016/j.tree.2008.11.009.

[179] Søndergaard, M., Jeppesen, E., Lauridsen, T.L., Skov, C., Van Nes, E.H., Roijackers, R., Lammens, E., and Portielje, R.O.B. Lake restoration: successes, failures and long-term effects. *Journal of Applied Ecology*, 44 (6): 1095–1105, 2007. https://doi.org/https://doi.org/10.1111/j.1365-2664.2007.01363.x.

[180] Suphawan, K., and Chaisee, K. Gaussian process regression for predicting water quality index: A case study on Ping River basin, Thailand. *AIMS Environ. Sci.*, 8: 268–282, 2021.

[181] Talebizadeh, M., and Moridnejad, A. Uncertainty analysis for the forecast of lake level fluctuations using ensembles of ANN and ANFIS models. *Expert Systems with Applications*, 38 (4): 4126–4135, 2011. https://doi.org/https://doi.org/10.1016/j.eswa.2010.09.075.

[182] Ubah, J.I., Orakwe, L.C., Ogbu, K.N., Awu, J.I., Ahaneku, I.E., and Chukwuma, E.C. Forecasting water quality parameters using artificial neural network for irrigation purposes. *Scientific Reports*, 11 (1): 24438, 2021. https://doi.org/10.1038/s41598-021-04062-5.

[183] Vapnik, V.N. *The Nature of Statistical Learning Theory*. Springer New York, NY, 1995. https://doi.org/https://doi.org/10.1007/978-1-4757-3264-1.

[184] Voinov, A.A., and Tonkikh, A.P. Qualitative model of eutrophication in macrophyte lakes. *Ecological Modelling*, 35: 211–226, 1987.

[185] Vollenweider, R.A. Advances in defining critical loading levels for phosphorus in lake eutrophication. *Mem Ist Ital Idrobiol*, 33 53–83, 1976.

[186] Vollenweider, R.A. Scientific fundamentals of the eutrophication of lakes and flowing waters, with particular reference to nitrogen and phosphorus as factors in eutrophication. *Paris Rep*, 192:14, 1968.

[187] Walmsley, D. Perspectives on eutrophication of surface waters. *Water Sewage and Effluent*, 21 (5): 34-37, 2001.

[188] Wang, H., and Wang, H. Mitigation of lake eutrophication: Loosen nitrogen control and focus on phosphorus abatement. *Progress in Natural Science*, 19

(10): 1445–1451, 2009. https://doi.org/https://doi.org/10.1016/j.pnsc.2009.03.009.

[189] Wassmann, P., and Olli, K. Drainage basin nutrient inputs and eutrophication: an integrated approach. University of Tromsø, Norway 2005.

[190] Watson, S.B., Miller, C., Arhonditsis, G., Boyer, G.L., Carmichael, W., Charlton, M.N., Confesor, R., Depew, D.C., Höök, T.O., Ludsin, S.A., et al. The re-eutrophication of Lake Erie: Harmful algal blooms and hypoxia. *Harmful Algae*, 56: 44–66, 2016. https://doi.org/https://doi.org/10.1016/j.hal.2016.04.010.

[191] Wei, B., Sugiura, N., and Maekawa, T. Use of artificial neural network in the prediction of algal blooms. *Water Research*, 35 (8): 2022–2028, 2001. https://doi.org/https://doi.org/10.1016/S0043-1354(00)00464-4.

[192] Weimin, C., Yuwei, C., Xiyun, G., and Yoshida, I. Eutrophication of Lake Taihu and its control. *International Agricultural Engineering Journal*, 6 (2): 109–120, 1997.

[193] Wu, W., Dandy, G.C., and Maier, H.R. Environmental Modelling & Software Protocol for developing ANN models and its application to the assessment of the quality of the ANN model development process in drinking water quality modelling. *Environmental Modelling and Software*, 54: 108–127, 2014. https://doi.org/10.1016/j.envsoft.2013.12.016.

[194] Xu, Y., Ma, C., Liu, Q., Xi, B., Qian, G., Zhang, D., and Huo, S. Method to predict key factors affecting lake eutrophication – A new approach based on Support Vector Regression model. *International Biodeterioration & Biodegradation*, 102: 308–315, 2015. https://doi.org/https://doi.org/10.1016/j.ibiod.2015.02.013.

[195] Yadav, S., Yoneda, M., Susaki, J., Tamura, M., Ishikawa, K., and Yamashiki, Y. A Satellite-Based Assessment of the Distribution and Biomass of Submerged Aquatic Vegetation in the Optically Shallow Basin of Lake Biwa. *Remote Sensing*, 9 (9): 966, 2017.. https://doi.org/10.3390/rs9090966.

[196] Yamashiki, Y., Matsumoto, M., Tezuka, T., Matsui, S., and Kumagai, M. Three-dimensional eutrophication model for Lake Biwa and its application to the framework design of transferable discharge permits. *Hydrological processes*, 17 (14): 2957–2973, 2003.

[197] Yan, H., Zou, Z., and Wang, H. Adaptive neuro fuzzy inference system for classification of water quality status. *Journal of Environmental Sciences*, 22 (12): 1891–1896, 2010. https://doi.org/https://doi.org/10.1016/S1001-0742(09)60335-1.

[198] Yan, H., Wu, D., Huang, Y., Wang, G., Shang, M., Xu, J., Shi, X., Shan, K., Zhou, B., and Zhao, Y. Water eutrophication assessment based on rough set and multidimensional cloud model. *Chemometrics and Intelligent Laboratory Systems*, 164: 103–112, 2017. https://doi.org/https://doi.org/10.1016/j.chemolab.2017.02.005.

[199] Yang, X., Wu, X., Hao, H., and He, Z. Mechanisms and assessment of water eutrophication. *Journal of Zhejiang University SCIENCE B*, 9 (3): 197–209, 2008. https://doi.org/10.1631/jzus.B0710626.

[200] Yarar, A., Onucyıldız, M., and Copty, N.K. Modelling level change in lakes using neuro-fuzzy and artificial neural networks. *Journal of Hydrology*, 365 (3): 329–334, 2009. https://doi.org/https://doi.org/10.1016/j.jhydrol.2008.12.006.

[201] Yaseen, Z.M., Ramal, M.M., Diop, L., Jaafar, O., Demir, V., and Kisi, O. Hybrid Adaptive Neuro-Fuzzy Models for Water Quality Index Estimation. *Water Resources Management*, 32 (7): 2227–2245, 2018. https://doi.org/10.1007/s11269-018-1915-7.

[202] Yüzügüllü, O., and Aksoy, A. Determination of Secchi Disc depths in Lake Eymir using remotely sensed data. In *The 2nd International Geography Symposium GEOMED2010*, pages 586–592, 2011. https://doi.org/10.1016/j.sbspro.2011.05.173.

[203] Zare Farjoudi, S., and Alizadeh, Z. A comparative study of total dissolved solids in water estimation models using Gaussian process regression with different kernel functions. *Environmental Earth Sciences*, 80 (17): 557, 2021. https://doi.org/10.1007/s12665-021-09798-x.

[204] Zhang, C., Gao, X., Wang, L., and Chen, Y. Analysis of agricultural pollution by flood flow impact on water quality in a reservoir using a three-dimensional water quality model. *Journal of Hydroinformatics*, 15: 1061–1072, 2013. https://doi.org/10.2166/hydro.2012.131.

[205] Zhang, H., Culver, D.A., and Boegman, L. A two-dimensional ecological model of Lake Erie: Application to estimate dreissenid impacts on large lake plankton

populations. *Ecological Modelling*, 214 (2): 219–241, 2008. https://doi.org/https://doi.org/10.1016/j.ecolmodel.2008.02.005.

[206] Zhang, J., Jørgensen, S.E., Beklioglu, M., and Ince, O. Hysteresis in vegetation shift—Lake Mogan prognoses. *Ecological Modelling*, 164: 227–238, 2003. https://doi.org/10.1016/S0304-3800(03)00050-4.

[207] Zhang, Z., Ma, X., and Yang, Y. Bounds on the number of hidden neurons in three-layer binary neural networks. *Neural Networks*, 16: 995–1002, 2003. https://doi.org/10.1016/S0893-6080(03)00006-6.

[208] Zhao, J., Guo, H., Han, M., Tang, H., and Li, X. Gaussian Process Regression for Prediction of Sulfate Content in Lakes of China. *Journal of Engineering and Technological Sciences*, 51 (2): 198–215, 2019. https://doi.org/10.5614/J.ENG.TECHNOL.SCI.2019.51.2.4.

[209] Zhao, J., Ramin, M., Cheng, V., and Arhonditsis, G.B. Plankton community patterns across a trophic gradient: The role of zooplankton functional groups. *Ecological Modelling*, 213: 417–436, 2008.

[210] Zounemat-Kermani, M. Principal Component Analysis (PCA) for estimating chlorophyll concentration using forward and generalized regression neural networks. *Applied Artificial Intelligence*, 28 (1): 16–29, 2014. https://doi.org/10.1080/08839514.2014.862771.

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