

Papers

Here are some papers which are relatively generic and might be applicable for many ML users in Geoscience.

Gardner, M.W., Dorling, S.R., 1998. [Artificial neural networks \(the multilayer perceptron\)](#)—a review of applications in the atmospheric sciences. *Atmospheric Environment* 32, 2627–2636.

Gevrey, M., Dimopoulos, I., Lek, S., 2003. [Review and comparison of methods to study the contribution of variables in artificial neural network models](#). *Ecological Modelling, Modelling the structure of aquatic communities: concepts, methods, and problems*. 160, 249–264.

Hornik, K., Stinchcombe, M., White, H., 1989. [Multilayer feedforward networks are universal approximators](#). *Neural Networks* 2, 359–366.

Kohonen, T., 2001. [Self-Organizing Maps](#), 3rd ed, Springer Series in Information Sciences. Springer-Verlag, Berlin Heidelberg.

Olden, J.D., Jackson, D.A., 2002. [Illuminating the “black box”](#): a randomization approach for understanding variable contributions in artificial neural networks. *Ecological Modelling* 154, 135–150 .

Olden, J.D., Joy, M.K., Death, R.G., 2004. [An accurate comparison of methods for quantifying variable importance in artificial neural networks using simulated data](#). *Ecological Modelling* 178, 389–397.

Reichstein, M., Camps-Valls, G., Stevens, B., Jung, M., Denzler, J., Carvalhais, N., Prabhat, 2019. [Deep learning and process understanding for data-driven Earth system science](#). *Nature* 566, 195.

Toms, B.A., Barnes, E.A., Ebert-Uphoff, I., 2019. [Physically Interpretable Neural Networks for the Geosciences: Applications to Earth System Variability](#).

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