

Studies in Computational Intelligence 1062

George A. Anastassiou

Banach Space Valued Neural Network

Ordinary and Fractional Approximation and Interpolation

This book is about the generalization and modernization of approximation by neural network operators. Functions under approximation and the neural networks are Banach space valued. These are induced by a great variety of activation functions deriving from the arctangent, algebraic, Gudermannian, and generalized symmetric sigmoid functions. Ordinary, fractional, fuzzy, and stochastic approximations are exhibited at the univariate, fractional, and multivariate levels. Iterated-sequential approximations are also covered. The book's results are expected to find applications in the many areas of applied mathematics, computer science and engineering, especially in artificial intelligence and machine learning. Other possible applications can be in applied sciences like statistics, economics, etc. Therefore, this book is suitable for researchers, graduate students, practitioners, and seminars of the above disciplines, also to be in all science and engineering libraries.

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