Design of the Optimal Signal in Networks Using Artificial Neural Network Technique MINJAE KIM, The Hun School of Princeton, RICHARD KYUNG, CRG-NJ — Neural networks have come to be understood as an important piece of contemporary technology that influences our daily life. Network theory has become a central toolbox to a variety of disciplines, such as social systems, the web, and neurosciences with relevant studies in graph theory and networks. To design a network that can predict an output from input data and hidden layers, an efficient artificial neural network algorithm was used in this paper. The theory was applied to a physical system and biological neural system, respectively. To minimize the error signals and output errors obtained from different train epochs, Neural Network Fitting App and AI programming were employed. Since the data requires a proper statistical method in which the fitting model exactly matches the data, the least-squares method was used to minimize the deviations between the assumed model and the actual data. After the network has been trained, an artificial neural network was employed to compute the outputs, errors, and overall performance.

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