Abstract

In this paper, Neural network algorithm is introduced to study the singular system of a linear electrical circuit for time invariant and time varying cases. The discrete solutions obtained using neural network are compared with Runge-Kutta(RK) method and exact solutions of the electrical circuit problem and are found to be very accurate. Error graphs for inductor currents and capacitor voltages are presented in a graphical form to show the efficiency of neural network algorithm. This neural network algorithm can be easily implemented in a digital computer for any singular system of electrical circuits.

Reference

- J. A. Anderson and E. Rosenfeld, Eds., Neurocomputing: Foundations of
Solution of Linear Electrical Circuit Problem using Neural Networks

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Index Terms

Computer Science Neural Networks

Key words

Singular systems
Runge-Kutta method
Neural networks