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A complexity and efficiency of adaptive momentum on back-propagation algorithmt

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The use of artificial neural networks algorithm based on adaptive momentum techniques has been derived to improve the speed of convergence, and minimizing the error misadjustment to obtain high accuracy in short time of process. However, these techniques suffer from computational complexity. The recently back-propagation with adaptive momentum (PBPAM) algorithm has demonstrated superiority performance of various proposed adaptive momentums of back-propagation algorithm versions in terms of convergence rate, sum of squared error (SSE), and accuracy. In this paper, we will compare the computational complexity of PBPAM algorithm with other BP versions. The PBPAM algorithm is characterized by its simplicity, because it does not need much CPU processing, and it obtains good results in a short period of time. Simulation results have shown that the PBPAM algorithm provides a faster convergence, lower SSE, higher accuracy and lower computational complexity comparing to other BP algorithms using different dataset from UCI and KEEL repositories.

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Advanced biometrics

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In recent times, an increasing, worldwide effort has been devoted to the development of automatic personal identification systems that can be effective in a wide variety of security contexts. As one of the most powerful and reliable means of personal authentication, biometrics has been an area of particular interest. It has led to the extensive study of biometric technologies and the development of numerous algorithms, applications, and systems, which could be defined as advanced biometrics. This presentation will systematically explain this new research trend. As case studies, a new biometrics technology (palm print recognition) and two new biometrics applications (medical biometrics and aesthetical biometrics) are introduced. Some useful achievements could be given to illustrate their effectiveness.

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