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Neural Networks with Different Initialization Methods for Depression Detection

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Abstract : As a common mental disorder, depression is a leading cause of various diseases worldwide. Early detection and treatment of depression can dramatically promote remission and prevent relapse. However, conventional ways of depression diagnosis require considerable human effort and cause economic burden, while still being prone to misdiagnosis. On the other hand, recent studies report that physical characteristics are major contributors to the diagnosis of depression, which inspires us to mine the internal relationship by neural networks instead of relying on clinical experiences. In this paper, neural networks are constructed to predict depression from physical characteristics. Two initialization methods are examined - Xaiver and Kaiming initialization. Experimental results show that a 3-layers neural network with Kaiming initialization achieves 83% accuracy.

Keywords : depression, neural network, Xavier initialization, Kaiming initialization
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