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Design for CNN Templates with Performance of Global Connectivity Detection

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Abstract: The cellular neural/nonlinear network (CNN) is a powerful tool for image and video signal processing, robotic and biological visions. This paper discusses a general method for designing template of the global connectivity detection (GCD) CNN, which provides parameter inequalities for determining parameter intervals for implementing the corresponding functions. The GCD CNN has stronger ability and faster rate for determining global connectivity in binary patterns than the GCD CNN proposed by Zarandy. An example for detecting the connectivity in complex patterns is given.

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Key words: cellular neural network, global connectivity detection, template parameters

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