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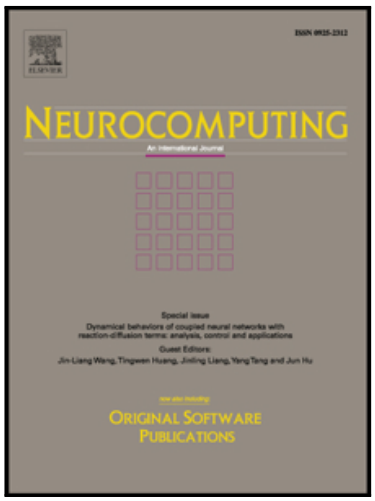


# Editorial: Learning System in Real-time Machine Vision

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# Editorial: Learning System in Real-time Machine Vision

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With the widespread use of deep learning in training computer to understand human, many researches in extracting human senses have been conducted. In most of the researches, one challenge is to use neural system to decipher the individual's vision. To achieve this target, the first is to build a model that can understand the visual perception of the human, and then build a theoretical solution of multi-dimensional sense of the calculation method. A number of new algorithms have been proposed to solve the problem, e.g., a semi supervised learning algorithm called active depth network. In 2010, a new method was proposed to judge discriminative deep belief networks (DDBN), and was successfully applied to the visual data classification, and had demonstrated the impressive learning performance in the synthetic data set and the real world data set. In 2013, a semi supervised learning algorithm was developed and called convolutional deep networks (CDN) which could solve deep learning in the classification of images. With the development of ubiquitous and sensors technologies, the deep learning in particular neural system in real-time machine vision application has been becoming a hot topic. Based on such new sensing channels and other multisensory prior with additional information which could be valuable constrains for optimization step and further improve the general performance, rapid and precise dense correspondence approach can significantly improve the experience of the augmented reality in terms of compatibility of mixing of virtual environment and reality space. The deep learning technique makes a step forward to provide hidden features and end-to-end knowledge representation for many precentral issues e.g. motion and texture style etc.

Such learning system in particular the neural system may have many applicable fields. In the real-time image space, the information observed by the dynamical behavior of the object of interest or by the motion of the camera itself is a decisive interpretation for representing natural phenomena. Many real-world problems are related to the low-level characterization of such information, for example dense correspondence estimation, which has become one of the most active fields because such characterizations can be extremely embedded into a large number of other higher-level fields and application domains. However, for many

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