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Multimodal Object Recognition and Categorisation by Interactive Behaviours

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Abstract: Human beings have an excellent ability which can form and recognise object categories. In this paper, a novel system of multimodal object recognition and categorisation by performing interactive behaviours is introduced. Video clips are filmed as the raw input of the system. A dataset of 100 objects with 18 categories and 5 different interactions is used to evaluate the performance. Convolutional neural network is used to train the classifier and learn the categories. The result shows the highest, lowest and average recognition accuracies of every specific object in every category and the receiver operating characteristic for every category. The connection between the presented system and human cognitive system is discussed in the conclusion and future works.