

Bare Demo of IEEEtran.cls for IEEE Conferences

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Abstract—The abstract goes here.

I. INTRODUCTION

Neural network is an information processing structure abstracted by the biological structure, consisting of processing element interconnected together with unidirectional signal channels called connections[1]. As the neural network has three advantages, has been widely used in pattern classification, system identification, image processing and other fields. First, neural network is data driven self-adaptive methods. Second, they are universal functional approximators in that they can approximate any function. Third, neural networks are powerful nonlinear models, which makes them flexible in handling real world relationships. Over the last few years, machine learning algorithms have led to more efficient methods and traditional neural network has developed different structures for different problems.

Convolutional neural network(CNN) is a kind of structural variation of traditional neural network, utilizing layers with convolving filters that are applied to local features. After Alex Krizhevsky use deep convolutional neural networks in ImageNet classification problem, machine learning researcher reach a consensus that general CNN structure composed of convolution layer, pooling layer and fully connected layer. compare to the conventional neural networks, the key features of convolutional neural network are adding the consensus layer in the structure so the network can perceive local features.

Originally invented for computer version[2 LeCun et al., 1998], CNN models have subsequently been shown to be effective for many different problems including , simultaneous localization and mapping(SLAM), and decision making and robot controlling. Natural Language Processing(NLP) is a typical field that CNN can be used in because of the local features in language. Researchers have handle a number of NLP tasks with both speed and accuracy[Natural Language Processing (Almost) from Scratch]. Speech emotion recognition(SER) is another interesting filed for CNN, Qirong Mao emotion feature learning, in which the optimal feature set for SER are learned automatically by CNN[Learning Salient Features for Speech Emotion Recognition Using Convolutional Neural

Networks]. As simultaneous localization and mapping problem, researchers extracts global image features from DCNNs on all images and solve a graph-base SLAM problem[Robust Visual SLAM Across Seasons].

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II. CONCLUSION

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REFERENCES

- [1] H. Kopka and P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.