

Deep Learning for Automatic Speech Recognition

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Introduction

In this paper we examine two deep learning method for automatic speech recognition: deep neural networks and convolutional neural networks based on the works of [DYDA12] and [AMJ⁺14] respectively.

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Traditional Approach

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Deep Neural Networks Approach

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Convolutional Neural Networks Approach

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Experimental Results

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Conclusions

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References

- [AMJ⁺14] Ossama Abdel-Hamid, Abdel-rahman Mohamed, Hui Jiang, Li Deng, Gerald Penn, and Dong Yu. Convolutional neural networks for speech recognition. *IEEE/ACM Transactions on Audio, Speech & Language Processing*, 22(10):1533–1545, 2014.
- [DYDA12] George E. Dahl, Dong Yu, Li Deng, and Alex Acero. Context-dependent pre-trained deep neural networks for large-vocabulary speech recognition. *IEEE Transactions on Audio, Speech & Language Processing*, 20(1):30–42, 2012.