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Biomimetic neural network inspired by human hearing

Wednesday, December 1, 2021 3:00 PM (30 minutes)

Human hearing has a very amazing ability that even advanced technology cannot imitate. The difference in energy between the smallest and loudest audible sounds is about a trillion times. The frequency resolution is also excellent, so the ear can distinguish a frequency difference of about 4 Hz. What is more surprising is that it can be heard even where there is a louder noise than the sound of speech, and it can detect the direction of the sound and focus on listening to one of several people's speech. Many efforts have been made to understand this principle of hearing, but it is not yet fully understood. In this talk, we will show that if we create an artificial neural network that mimics human hearing and train a machine just like a human learns, it can surprisingly have the characteristics of human hearing.

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