

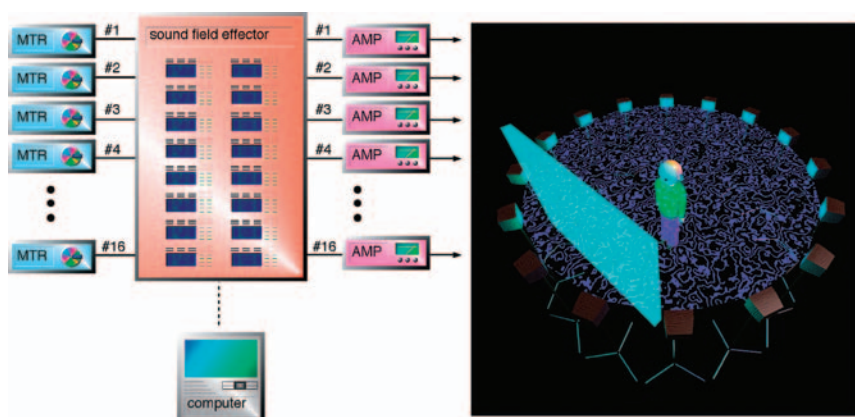
Obstacle Perception Training System for the Blind People

Obstacle perception is a skill to detect presence of "silent" object, such as wall, etc., by perceiving the acoustical cues, such as reflected sound, etc., through auditory sense. This skill is very important for orientation and mobility (O&M) of the blind. We are studying the training system for acquiring this skill in

the blind education and rehabilitation by using acoustical technologies. Our training system can reproduce ideal sound fields for learning the principle of obstacle perception. We are also distributing the audio CD that contains these sound fields to the people concerned with the blind education and rehabilitation.

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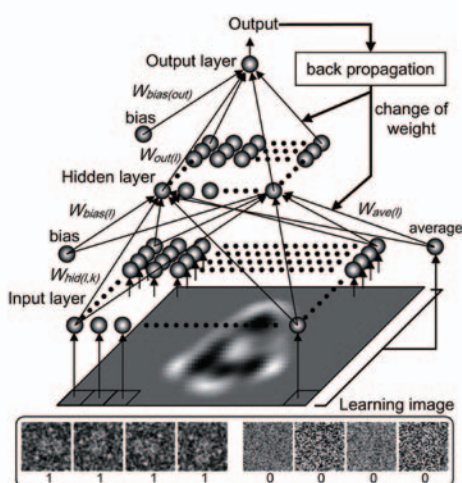


Obstacle Perception Training System. It can reproduce the ideal sound field for the beginners training

An Automatic Particle Pick-up Method using Neural Network Applicable to Cryo-EM

Three-dimensional reconstruction from electron micrographs requires the selection of many single particle projection images; more than 10,000 are generally required to obtain 5 ~ 10 Å structural resolution. This paper presents a new automated particle recognition and pick-up procedure based on the three layer neural network. Its use for both faint and noisy electron micrographs is demonstrated. The method only requires 200 selected particles as learning data and is able to detect images of proteins as small as 200 kDa¹⁾.

¹⁾ T. Ogura & C. Sato, J. Struct. Biol., Vol. 136, 227-238 (2001).



Schematic representation of the three-layer NN and its learning process

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