# Reproduction of plosive sound vocalization by the talking robot based on the visual information

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## ABSTRACT

The authors are developing a vocalization training system for the auditory-impaired. The training system employs a talking robot which has mechanical organs like a human. With an adaptive learning strategy using an auditory feedback control, the robot autonomously learns the vocalization to speak like a human, and then reproduces the speech articulation from inputted vocal sounds. In the previous study, the training system for 5 Japanese vowels was constructed. The effectiveness was assessed by a training experiment conducted in Kagawa Prefectural School for the Deaf, and significant results were obtained. In the next step, the training system for consonant vocalization is studied. The plosive sounds such as /p/, /t/ and /k/ are produced by sudden opening and closing motions of a mouth, and it is not an easy task to reproduce the vocalization based on the auditory feedback learning. To solve this problem, visual information is employed to reproduce the plosive sound vocalization by the talking robot. In this study the learning method of the plosive sounds is introduced. The reproduced robotic vocalizations are evaluated by an experiment, and we validated that the robot successfully reproduced the vocalizations of the able-bodied.

**Full papers will be published in the Conference Proceeding s and will be available to delegates at the conference on Sept. 10.**

**Full papers will be released on-line in the ICDVRAT archive on March 15.**