

N. D. Khambete and P. C. Pandey, A speech training aid for the deaf, Proc. International Conference on Recent Advances in Biomedical Engineering 1994, Hyderabad, India, p. 287

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Abstract - Prelingual, profoundly deaf children have difficulty in achieving intelligible speech due to absence of auditory feedback of their own speech. This paper describes a speech training aid based on visual feedback of speech in the form of vocal tract shape display. A PC with an add-on DSP board, having on-board memory shareable between the dsp chip and the PC, is used as hardware setup. Vocal tract shape is derived from the speech signal using LPC technique. Real-time performance is achieved by first generating the vocal tract image by the dsp chip and then transferring it to the display memory of the PC. Vocal tract shapes obtained for vowels and vowel-consonant-vowel sequences are found closely matching with the actual ones. The system can be further modified by displaying more realistic vocal tract shape and designing appropriate training strategy.