

CONCERT-MASTER: SYNTHESIS OF MUSIC FOR THE BLIND USING CLASSIFICATION OF HAND GESTURES

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ABSTRACT

Gesture detection is an active area of research in the fields of Computer Vision, Machine Learning and Artificial Intelligence. It involves classifying certain positions of the human body and using them to actuate activities. This paper proposes a gesture based music synthesis system for the blind, to enable them to generate music notes and/or select songs solely by moving their hands. The proposed system consists of a camera (preferably webcam) which detects the user's hands – contour and fingertips, and can be operated in two modes, (1) playing a specific tone of a specific octave, and (2) playing a song from a list of them. The detection of the hands are done using skin detection in the Y-Cb-Cr space followed by a contour analysis of the same. Other modes also include segmentation in the HSV space, and adaptive thresholding using histogram backprojection. The system is programmed in Python and has a friendly command line interface for operating various modes.

Index Terms— One, two, three, four, five

1. INTRODUCTION

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(a) Result 1

(b) Results 3

(c) Result 4

Fig. 1. Example of placing a figure with experimental results.

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13. REFERENCES

- [1] Douglas Chai and King N. Ngan, "Face segmentation using skin-color map in videophone applications," *IEEE Transactions on Circuits and Systems for Video Technology*, vol. 9, no. 4, pp. 551–564, 1999.