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Author Cheng-Lin Shao
Author's Email Address No Public.
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Abstract
In this thesis, we have implemented an auxiliary system for the disabled by lips shape recognition. In this system, including two parts, one is the software system and the other is the hardware system, the role of software system is implement a recognition algorithm for the opened/closed status of lips images, including the face detect, the face tracking, the lips pattern recognition, the lips locations and extraction, the lips images processing etc. For the recognition of the opened/closed status of lips images, we can determine the status of the opened/closed lips by the relative distance between up-lip and bottom-lip, when our lips were opened or closed. When we get this information of the opened/closed status of lips images, we will transfer this information in the logic form to the parallel port. Next, we can output this signal to the micro-controller hardware system for further processing. The application of lips images recognition is for the home appliance control and text input system in PC, the former is to control home appliance by the opened/closed times of the lips, the latter is to perform a text input system by the lips status transformed to the Morse code. In conclusion, we have completed the auxiliary communication system for the disabled with no need of any type of appurtenance. We improve some defects of traditional auxiliary system. It will be unnecessary to wear any type of appurtenance. We believe that will be more helpful for the serious disabled especially with vertebra damaged. We hope our study can improve the communication abilities of the disabled and make some contribution to society.
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Chun-Tang Chao - advisor

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