Abstract

Various kind of mental illness is common in all parts of the globe, and all age groups. New diagnostic methods will be vital stage in reducing or eliminating these types of disease. In this paper novel fuzzy rule-base system is designed, and programmed by computer software, for diagnosis of Down Syndrome faces in an image. System input is an arbitrary color image. In first step face regions should be selected. An accurate face detection system is utilized which
Designing Fuzzy Inference System to Diagnosis down syndrome by Face Processing

applies skin color, lip position, face shape information and ear texture properties, as the key parameters. After this stage, detected face regions are processing carefully by proposed fuzzy system, and some features such as face area and eye distance are investigating carefully. Finally the probability of being Down Syndrom is revealed by designed system. 98.33% correct detection is obtained applying this algorithm on various image databases. This system could be considered as the first step to device automatic system for diagnosis of illness and would help psychiatry.

Reference

- http://www.imm.dtu.dk/~aam/aamexplorer
Computer Science

**Index Terms**

Fuzzy Systems

**Key words**

Mental illness

Down Syndrom

Face Detection

Fuzzy

rule-based system