Wilai Sasataradol 2010: An Online Visual Screening System for Children under Eight Years of Age. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Assistant Professor Dusit Thanapatay, Ph.D. 64 pages.

This research presents an innovation of online visual screenings system that shows potential to replace the manual visual screening system conducted by optometrists, healt public agents and visual screening teams.

The newly invented system is achieved by creating a visual screening program with a collection of methods such as stereograms and varying letter size.   An Apache HTTP web server is used to record the results to database.   The database can be online queried for the diagnosis. Moreover, digital image processing is used to detect tilt angle of the head.

The result of online visual screening system and manual visual screening are collected by the optometrists, healt public agents, visual screening teams and programmers from 163 school-aged children in Kindergarten 3 and Grade 1 of Wang Klai Kang Won School, Hua Hin district, Thailand. The correlation result between online visual screening system and manual visual screening system are 2 of 3 test parts but online visual screening system used lower resources than manual visual screening system (1:3 person/process) in the same process time. For head tilt detector program, the difference between the calculated result and the true result is less than 1.5% while measuring the head angle between -13.2° and 17.4°

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