Sri Lanka Institute of Information Technology

Project Topic Assessment – 2015

Research Problem:

> Software solution for diagnosing dental caries and periodontal diseases is not commonly used by dentists in Sri Lanka.
>
> Oral examinations using mouth mirrors are a cumbersome process for the dentist as well as the patient. Viewing the condition of a tooth is rather inconvenient for the dentist as well as the patient.
>
> Although maintaining patient records is carried out by the majority of dentists, maintaining graphical data on patients is not yet widespread in Sri Lanka.

Research Area:

> The proposed solution is a tool for diagnosing dental caries and periodontal diseases.
>
> This required the study of Dental Informatics field, dental imaging, and a basic understanding of general dentistry.

Solution proposed:

The proposed solution consists of a wireless Intraoral camera and a computer to display its output as the hardware components and a software system which will process the images captured by the intraoral camera and display relevant medical information on the screen to assist the dentist in decision making process.

- The system will be able to analyze and predict diseases after processing the captured images.

- These captured images can be stored in the patient database to create a knowledge base for the dentist.

- Patients' history will be stored in the system and reminders will be sent to the patient regarding appointments and treatments.

- Registered patients' dental structures could be modelled and updated constantly after different treatments.

- The dentist should be able to get a complete idea of the patients' conditions and previously carried out treatments from just one glance at the image.

- During a dental surgery, the system will allow the dentist to stream the video to a consultant in a different location and get needed advice in a video conference.

- The system will model the patients' dental structures in a way that the patient would be able to view the results of treatments carried out / to be carried out in the form of 3D graphics

Technologies to be used:

Software development will be carried out using :

- Image Processing. (Dental Imaging)
- Game development software.
- 3D modelling
- 2D to 3D conversion
- Statistical data analysis.

Hardware components that will be used :

- Wireless Intraoral camera.

Team Members:

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Acceptable: YES/NO

Changes proposed:

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Any other Comments:

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Approved by Project Coordinator:

        Signature: _____