

UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Automatic Pressure Ulcer Measurement using RGB-D Data

by

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For the Ph.D. degree in Computer Science and Engineering

The traditional pressure ulcer measuring process is subjective and requires frequent contact with the wound. This manuscript describes a new automatic pressure ulcer monitoring system (PrUMS), which uses a tablet connected to a 3D scanner, to provide an objective, consistent, non-contact measurement method. We combine color segmentation on 2D images and 3D surface gradients to automatically segment the wound region for advanced wound measurements. To demonstrate the system, two pressure ulcers on a mannequin are measured with PrUMS; ground-truth is provided by a clinically trained wound care nurse. The results of PrUMS 2D measurement (length and width) are within 1 mm average error and 2 mm standard deviation; the average error for the depth measurement is 2 mm and the standard deviation is 2 mm. PrUMS is tested on a small pilot dataset of 8 patients: the average errors are 3 mm, 3 mm, and 4 mm in length, width, and depth, respectively.

Thursday, July 25, 2019

11:00 AM

ENB 109

THE PUBLIC IS INVITED

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