

Dissertação de Mestrado em Engenharia Informática (2016/2017)

Title: Validation of the TICE.Healthy diabetic foot image device.

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Summary

Previous research work [1] culminated with the creation of a device that is capable of collecting thermo-sensitized images of the feet' plant, with the goal of being used to help diagnose the medical condition of diabetic feet, mostly when caused by vascular disease. The goal of this work is to perform the validation of this device, by comparing its results with the results obtained by the golden standard that is infrared imaging.

Objectives

The main objective is to validate the utility of the TICE.Healthy diabetic foot image device, comparing its results with the golden standard that is infrared imaging. This includes the preparation of a image and medical data collection protocol, that needs to be approved by an Ethics Committee, and the *in vivo* experiments and data and image collecting procedures. It also includes the assessment of the validity of the images the device captures, when compared with the golden standard.

Tasks

- T1 – Technological background study;
- T2 – Review the State-of-the-art;
- T3 – Definition and submission to approval of the image and medical data protocol;
- T4 – Data and image recording *in vivo*;
- T5 – Assessment of the validity of the device;
- T6 – The writing of the dissertation.

Expected result

In this research work the following deliverables are expected:

- A data and image collection protocol;
- A database containing the images;
- A conference paper describing the process;
- The dissertation.

Timeline

	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
T1	X	X									
T2		X	X								
T3			X	X							
T4				X	X	X	X				
T5							X	X	X		
T6						X	X	X	X	X	

References:

- [1] *Metabolic.Care A hardware and software platform to monitor and assess diabetic foot condition*, Daniel Oliveira, Paula Sousa, Virginie Felizardo, Nuno C. Garcia, Celina Alexandre, Nuno M. Garcia, published in the proceedings of 2014 IEEE 16th International Conference on e-Health Networking, Applications and Services (Healthcom), 15-18 October 2014, Natal, Brazil.