also expensive and other types of devices, such as metal oxide gas sensors use contact sensors which will need the device to be in contact with the wound.

[0005] A need therefore exists to provide a method and system for facilitating analysis of a wound in a target subject that seeks to address at least some of the above problems.

SUMMARY

[0006] According to a first aspect of the present invention, there is provided a method for facilitating analysis of a wound of a target subject, the method including: obtaining one or more digital images of at least a portion of the wound; processing the one or more digital images, using a first trained deep neural network which includes at least one convolutional layer trained on illumination variations; extracting a plurality of feature vectors from the one or more processed digital images; and identifying, using the first trained deep neural network, one or more of seven types of wound tissues based on the plurality of extracted feature vectors, wherein the seven types of wound tissues consists of: necrotic, slough, healthy granulation, unhealthy granulation, hyper granulation, infected and epithelization.

[0007] In an embodiment, the method may include processing the one or more digital images of the wound for segmentation of the wound from other surrounding tissue of the wound prior to extracting the plurality of feature vectors from the one or more digital images.

[0008] In an embodiment, the step of processing the one or more digital images of the wound for segmentation of the wound may include: down-sampling the one or more digital images of the wound; coarse segmentation of the down-sampled one or more digital images; and refinement of the coarse segmented one or more digital images.

[0009] In an embodiment, two digital images of the wound may be obtained separately from two digital image capturing devices spaced apart from each other, and the method may further include: constructing a three-dimensional model of the wound based on the two digital images of the wound; and processing the three-dimensional model of the wound for segmentation of the wound from other

surrounding tissue of the wound prior to extracting the plurality of feature vectors from the one or more digital images.

[0010] In an embodiment, the method may include determining at least one critical dimension of the wound based on the segmented three-dimensional model.

[0011] In an embodiment, a second trained deep neural network may be used to facilitate construction of the three-dimensional model of the wound.

[0012] In an embodiment, two digital images of the wound may be obtained and one of the two digital images may include a thermal image of the wound, and the method may further include: extracting thermal signature data from the thermal image; and identifying a secondary complication based on the extracted thermal signature data.

[0013] In an embodiment, the secondary complication may include at least one of: blood-circulation, wound infection, skin-related condition, undermining of wound and pressure point.

[0014] In an embodiment, the identified type of wound tissue may include at least one of: necrotic, slough, healthy granulation, unhealthy granulation, hyper granulation, infected and epithelization.

[0015] In an embodiment, the method may include: receiving wound data corresponding to one or more of: (i) the identified type of wound tissue, (ii) the dimension of the wound, and (iii) the identified secondary complication; generating a coded vector based on the wound data using a deep hashing function, the coded vector representing a consolidated assessment of the wound; retrieving, from a database, treatment data corresponding to the coded vector.

[0016] According to a second aspect of the present invention, there is provided a system for facilitating analysis of a wound of a target subject, the system including: one or more image capturing modules configured to obtain one or more digital images of at least a portion of the wound; a first neural network module configured to implement a first trained deep neural network for processing the one or more digital images including at least one convolutional layer trained on illumination variations; and a processor module configured to extract a plurality of feature vectors from the processed one or more digital images, wherein the first trained deep neural network is further configured to identify one or more of seven types of wound tissues based on the plurality of extracted feature vectors; wherein the seven types of wound tissues consists of: necrotic, slough, healthy granulation, unhealthy granulation, hyper granulation, infected and epithelization.

[0017] In an embodiment, the processor module may be further configured to process the one or more digital images of the wound for segmentation of the wound from other surrounding tissue of the wound prior to extracting the plurality of feature vectors from the one or more digital images.