The Creation of a Convolutional Neural Network To Classify Chronic Ulcer Infectivity

Gupta, Avi (School: Iolani School)

Chronic ulcers of the skin represent a major healthcare burden worldwide. Many patients with chronic ulcers are home bound and lack access to quality medical care. In this paper, we examined the utility of an AI and machine learning approach to help physicians manage chronic wounds of the skin. Using medical data images of wounds that are infected versus non infected, we sought to develop an AI algorithm that could accurately predict the infectivity state of the wound.A Convolutional Neural Network was developed using Jupyter Notebooks. The training accuracy was 92.785% and the validation accuracy was 88.996%. Overall, our results suggest that an AI based approach to wound care is realistic and future studies will aim to develop verified AI algorithms that will help assist physicians and help manage patients

Awards Won:

Arizona State University: Arizona State University ISEF Scholarship (valued at up to $52,000 each)