

Dynamic Cancer Thermography with Smartphone

Status: Available

Group Members: TBD

Sponsor(s):

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Project Description

The increase in smartphone usage in recent years has prompted the idea for designing a long wavelength infrared (LWIR) thermography APP for smartphones for detection of cancerous cells – e.g. breast cancer. According to the research in our team, we believe this technology will help to diagnose anomalies in very early stage. The project includes two main parts: 1- Hardware and 2-software. In hardware part we need to design an interface between sensors and smartphone, and in software part, we need to have an application software for image processing and smart decision making algorithm in order to figure out probability of cancerous tissue *in vivo*.

Milestones

1. Design and implement a phantom
2. Ethic approval and animal study
3. Developing an application software and image processing system
4. Develop interface for sensors and smartphone
5. Generating the necessary project documentation

Background

detection ratio. In spite of this, thermography has been used widely for diagnosis and monitoring. There are many image processing techniques and algorithms that have been employed to increase accuracy, sensitivity and specificity and usually these techniques have been applied for just one thermography picture to find higher temperature area or for a set of pictures captured for the time period of 2 minutes.