MEng Design Project Announcement – 2019-20 AY

Project title: Heart Health computer analysis from 3D CT images

Brief Description of Design Project Goals:

Overview:
Key to risk categorization for patent heart health is the evaluation of coronary artery calcium (CAC) from CT images. This project is to explore how these measurement and other heart risk measurements may be obtained fully automatically from 3D CT images of the heart.

Specific MEng Contribution:
Initial methods for CAC scoring using computer methods including deep learning methods have been reported in the literature. The student tasks for this project are: (a) to review all existing literature for this task, (b) to review and acquire any public image datasets that have been made available to evaluate computer methods (c) to implement alternative methods for CAC scoring and to compare the performance with a locally developed methods and datasets, and (d) to consider additional cardiac measures that may be obtained from the 3D CT data.

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Project Web Site: www.via.cornell.edu/students/

Number of MEng Students Needed: 3

Required Skills:
Experience in computer vision and computer vision programming tools for Linux, C, and python. It is required to take ECE 5470 Computer Vision in the Fall semester to gain these skills if the student has not already taken this course.

Estimated Project Time Frame:

2019-20 Academic Year, Two (2) Semesters