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Title: Robert French Project 2 CSC4120

Problem Statement (1 line) -- *What is the problem/challenge you are addressing?*
The difficulty of deriving the shape of objects in a robot's surroundings.

Goal (1-3 lines) -- *What are the aims of your project? What will you demonstrate*

Create an actuated tool to project a measurable light onto objects surrounding a robot. Use a camera to capture an image of the light from the tool. Process the data gathered by the camera into usable data about the shape of the object illuminated by the actuated tool.

Approach (short paragraph) -- *what is your strategy for solving the problem or achieving the goal?*

The idea is to use an array of low-power laser diodes (<5mW) to project an array of laser dots onto a nearby object. Then a camera will capture a picture of the object with the array of dots hitting it and the information from the camera will be processed into data about the size of the object. By making the array and camera able to rotate, the changing shape of the laser dots could yield useful information on the position of the object.

Tentative timeline
(FORMAT: task, # of days)

Create laser diode array, 3
Align and calibrate the camera with the array, 6
Create an algorithm to process the images from the camera into useful information, 30