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Data Acquisition for Roger’s Sock Device

Kevin Tsao

Mentor: Igor Efimov

The research conducted in the Efimov lab deals mostly with imaging of the cardiovascular region of the body. The purpose of these experiments is to test the effectiveness of certain cameras in observing the heart. These cameras are useful for a technique called optical mapping that helps track cardiac arrhythmias. Optical mapping uses cameras to track fluorescent dyes that are injected into the heart. These dyes glow according to the voltage of the hearts surface; in short these dyes are voltage sensitive. I wrote code using Labview to create data acquisition for the Rodgers Cardiac Sock. This sock is an elastic material lined with electrodes that fits around a heart. The gold squares on the elastic material are electrodes that record the voltage of the surface of the heart. This sock is useful because if there is an anomaly in electrical activity in the heart, the sock can be used to pinpoint the location of the problem by looking at which electrode recorded the faulty voltage.