Roland Allen Sanford

Computational Scientist

Contact Information

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Websites

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Language Ability

- MATLAB
- Python
- Java
- C++
- Julia
- JavaScript
- Bash
- C

Additional Skills

- Backpacking
- Hiking
- Broomball
- Bowling

[ras@Facebook /] $ Objective

Leverage my 3+ years developing high-performance software, writing technical documentation, and collaborating with industry professionals into a Summer 2017 software engineering internship at Facebook.

[ras@Facebook /] $ Education

Rochester Institute of Technology (RIT) Graduation: May 2018
Rochester, NY 14623 GPA: 3.47/4.00
Masters of Science: Applied and Computational Mathematics
Bachelors of Science: Double major in Physics and Computational Mathematics

[ras@Facebook /] $ Employment

Cardiac Imaging Developer
Rochester Institute of Technology Feb 2015—Present

- Created a MATLAB pipeline that constructs to-scale models of a patient's heart and torso, computes the electrical potentials on the heart's surface, and determines the qualitative location of the cardiac arrhythmia.
- Conducted patient analysis in collaboration with electrophysiologists at Johns Hopkins Hospital resulting in the successful treatment rate of 92%.
- Informing the design of a 120-electrode vest using a genetic algorithm. The fitness function is being optimized to improve signal quality from specified regions of the heart.

Contact Lenses Research Assistant
Rochester Institute of Technology Jan 2015—Present

- Modeled the progression of a soft contact lens and a human eye towards equilibrium in a C++ simulation to inform the design of contact lenses.
- Currently working to improve the simulation accuracy and develop a graphic interface to be used by engineers.

Web Developer
Alden Optical Aug 2015—Jan 2016

- Developed a responsive web application in JavaScript that visualizes the effects of changing contact lens design parameters to be used as a marketing tool.
- Utilized the D3 and jQuery libraries to display design changes in real-time.

[ras@Facebook /] $ Projects

Modeling Cancer Cells
Rochester Institute of Technology Aug 2016—Present

- Built upon an existing Julia code base to allow the simulations of healthy and cancerous breast cells in a three-dimensional confinement.
- Currently working to increase the simulation throughput by increasing the numerical accuracy and refactoring the code into a parallelizable form.

Heating with Andriod
UBHack Oct 2015

- Constructed a heater out of black-painted aluminum cans and two computer fans controlled by an Andriod application.
- Used a Bluetooth protocol to communicate between the Android device and an Arduino that controlled the fan speed.