

# Roland Allen Sanford

## Computational Scientist

### Contact Information

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### Websites

in/rasanford

/ras9841



### Language Ability

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

### Additional Skills

■■■	Backpacking
■■■	Hiking
■	Broomball
■	Bowling

### [ras@MagicLeap /] \$ Objective

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

### [ras@MagicLeap /] \$ Education

#### Rochester Institute of Technology (RIT)

Rochester, NY 14623

Graduation: May 2018

GPA

*Masters of Science:* Applied and Computational Mathematics

4.00/4.00

*Bachelors of Science:* Physics, Computational Mathematics (double major)

3.42/4.00

### [ras@MagicLeap /] \$ Employment

#### 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.

#### 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.

#### 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@MagicLeap /] \$ Projects

#### Modeling Cancer Cells

Rochester Institute of Technology

Aug 2016—Present

- Prototyped a solution in Julia to show the feasibility of studying healthy and cancerous breast cell interactions through numerical simulations.
- Currently implementing a solution in C++ that increases the throughput of the simulation by utilizing the OpenMP library, allowing realistic comparisons to be drawn between the simulation and biological results.

#### 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.