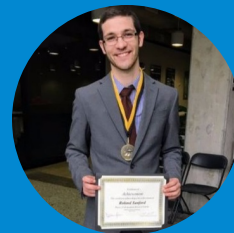


Allen Sanford

Computational Scientist

Looking to combine my mathematical background and industry experience into a Summer 2018 Software Engineering internship.



 ras9841@rit.edu

 [in/rasanford](https://www.linkedin.com/in/rasanford)

 [/ras9841](https://github.com/ras9841)

Education

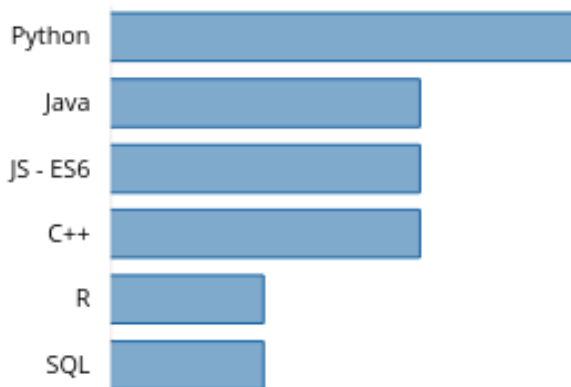
Rochester Institute of Technology (RIT)

Masters of Science 4.0/4.0
Applied and Computational Mathematics

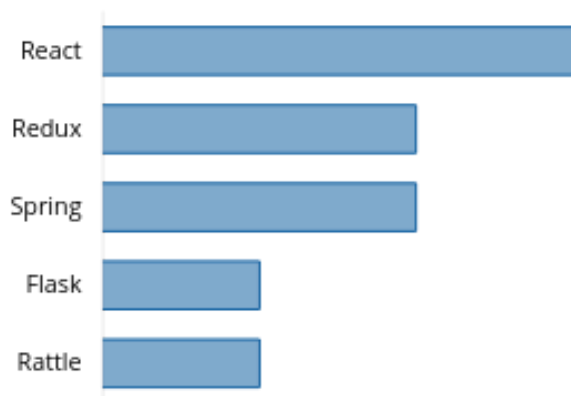
Bachelors of Science 3.4/4.0
Physics, Computational Mathematics

Expected Graduation Dec 2018

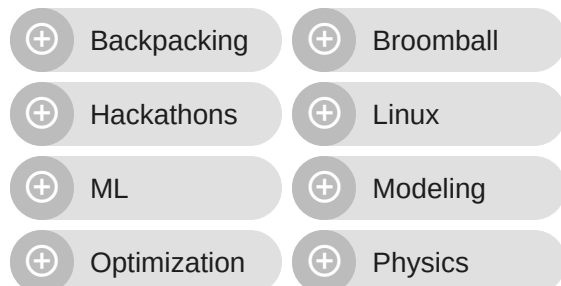
Languages



Frameworks



Interests



Employment

Full Stack Engineer (Co-op)

Jun 2017 - Dec 2017

Intuit

- Migrated front-end stack from Backbone.js to React with Redux-Saga.
- Implemented back-end services and APIs for upcoming features using Java 8 and Spring.
- Formed a team to build a statistical model for a customer-facing feature.

Contact Lens Research Assistant

Jan 2015 - Jan 2017

RIT, Alden Optical

- Modeled the progression of a soft contact lens and a human eye towards equilibrium to inform contact lens design.
- Worked iteratively with contact engineers to create a web application displaying design changes in real-time.
- Built a simulation framework in C++ that computed the pressure distribution on the eye given an initial lens shape.

Cardiac Imaging Software Developer

Feb 2015 - Present

RIT, Johns Hopkins Hospital

- 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.

Projects

Numerical Modeling of Cancer Cells

Aug 2016 - May 2017

- Prototyped a solution in Julia to show the feasibility of studying healthy and cancerous breast cell interactions.
- Created a framework in C++ that simulated the interactions of 100,000 cells in 10 minutes.
- Invented a spatial hashing algorithm that increased the simulation's speed by a factor of 8.

PhysLang

Sept 2017 - Present

- Aimed at providing an introduction to physics through light programming.
- Created an interpreter for a new language using Python's Rply library.