David Yalacki

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Junior Scientific Researcher in Bioengineering

My unusual life experiences have taught me that the best way to achieve success is to empower others. My life's mission is to build open source technologies that help people live healthier, more creative and vibrant lives. I have a proven ability to stay focused on long term projects, manage multiple projects at once and provide simple, yet innovative solutions to novel problems.

Education

Rice University, B.S. Bioengineering — 2014-2017

I wrote my senior thesis on how 3D printed fluidic networks can be used to supply nutrients to cells inside engineered tissue constructs. This work will lay the foundation for designing artificial vasculature.

United States Air Force Academy, Biology — 2012-2014

Basic training was tough, but afterwards I made the Commandant's List for 2 semesters and the Dean's List every semester. Before leaving to pursue engineering, I served as a basic training cadre.

Professional Experience

Miller Lab, Rice University, Houston, TX — Feb 2015 - Present

Redesigned, built and tested an open-source selective laser sintering machine to 3D print with carbohydrate materials. See our Github: github.com/MillerLabFTW/OpenSLS

- In order to distribute sugar over a build platform, I Learned to modify Marlin firmware to communicate with a slave arduino to drive a series of motors and servos.
- Our lab is interested in re-capitulating the architectural features of native vasculature. For this, I used SolidWorks, OpenSCAD, blender, python, Slic3r and Pronterface to design and print vascular templates with varying degrees of architectural complexity.
- Building the physical SLS machine required CAD of several 3D printed parts. Dozens of part designs and configurations were tested to ultimately construct the OpenSLS R5.

Cohrs Lab, UCD Medical School, Aurora, CO — June 2016 - August 2016

Participated in a summer internship program studying the herpes simplex virus

- Learned and executed a 3 day, 50 step protocol, gaining critical project management and documentation skills. Moreover, I learned how routine tasks could benefit from critical thought.
- Analyzed next-generation sequencing data on HSV-1 RNA to annotate viral gene features.

Achievements and Honors

- Co-author: *Open-source Selective Laser Sintering (OpenSLS) of nylon and biocompatible polycaprolactone. PLoS One. 2016* doi: 10.1371/journal.pone.0147399
- 3rd Place Falcon 50 Marathon Series
- Jewish Institute for National Security Affairs Scholar
- Volunteer Marathon Coach, Alzheimers Association, *2011, 2012*
- Hispanic Scholarship Fund Recipient, *2014, 2015, 2016*
- 1st Place, Rice Undergraduate Research Symposium
- Rice Sustaining Excellence in Research Scholar, Howard Hughes Medical Institute Scholarship Recipient, *2015*

About Me

A Colorado native, I am passionate about running, rock climbing, drawing and of course, open source technology. How passionate? I used Inkscape and LaTeX for this resume!