

# Sachin T. R. DeYoung

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## OBJECTIVE

Use my multidisciplinary skill set to contribute to aerospace and mechanical engineering.

## EDUCATION

University of California, Berkeley — Berkeley, CA

*Mechanical Engineering, expected graduation May 2019*

Kansas State University (27 credits) — Manhattan, KS

Jan 2014 to May 2015, during high school

Coursework: *Mechatronics Design, Introduction to Embedded Systems, Heat Transfer, Processing of Materials in Manufacturing, Vehicle Dynamics and Control, Introduction to Artificial Intelligence, Design of Microprocessor-Based Mechanical Systems, Dynamic Systems and Feedback Control Systems, Fluid Dynamics, Engineering Mechanics I II (Dynamics), Thermodynamics, Solid Mechanics, Strength of Materials, Visualization for Design, Computer Programming for Engineers, Manufacturing and Tolerancing, Three-Dimensional Modeling for Design*

## SKILLS

**Software:** SOLIDWORKS (modeling, Finite Element Analysis), MATLAB/Simulink, ANSYS, Linux, Python, C, AutoCAD, L<sup>A</sup>T<sub>E</sub>X, LabView

**Lab/Shop:** Machining (lathe, milling machine, CNC, etc.), materials testing, GD&T, welding, heat treating, laser cutting, 3D printing

## PREVIOUS EMPLOYMENT

Omron Adept Technologies — San Ramon, CA

*NDA signed*

Jun to Aug 2017 and May to Aug 2018

- Provided support in the design, construction and implementation of experiments that were focused on evaluating a given design or validating proposed engineering solutions in the fields of robotics and mechatronics.
- Developed and used modal analysis software to analyze company and competitor robots, avoiding the need to spend \$15,000 on third-party software and hardware.
- Created hardware and optimized control systems to perform life-testing on mobile robot motors.
- Executed tests at customer's request to determine source of particulate matter on robot interfering with customer's manufacturing process and drove solution development.
- Ran shock load and drag tests critical to development of new mobile robot.

## PROJECTS

Berkeley Formula Racing (BFR) Chassis Lead, <http://fsae.berkeley.edu/>

Fall 2015 to present

- Designed and built the B18 steel chassis. 'Best chassis at competition' per structural design judge.
- Developed and drove testing to determine engine reaction loads. Test data integrated into vibration and fatigue analysis.
- Proficiency in designing four chassis and maximizing torsional stiffness-to-weight ratio.
- Experience manufacturing four chassis—each of over 100 tubes—to tight tolerances.
- Competed in fSAE Lincoln 2017 and 2018.

## LABORATORY WORK

Computational Imaging Lab, Dr. Laura Waller, UC Berkeley, EECS Department

May to Dec 2016

- Designed and developed coded illumination method to observe transparent biological cells without use of damaging color dyes and demonstrated proof-of-concept inexpensively using an LCD screen, Raspberry Pi, and 3D printer.
- Presented findings at 2016 Rice University Gulf Coast Undergraduate Research Symposium, "Coded Illumination using a Pocket Picture Frame," S. DeYoung, Z. Phillips, and L. Waller (2016).

Multiphase Microfluidics Lab, Dr. Amy Betz, Kansas State U, MNE Department

Aug 2013 to Aug 2015

- Fabricated apparatus to demonstrate liquid drop motion caused by the Leidenfrost effect.
- Designed a device to utilize this motion to convert thermal energy to electrical energy.
- Coded a micromilling machine; researched and applied material properties and circuitry.