ROGER LO

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EDUCATION

Massachusetts Institute of Technology, Class of 2016
B.S. in **Mechanical Engineering**

CAREER

GM CRUISE – *Senior M.E., Mechanical Engineer* (Aug. '16 - Present)

Design of automotive hardware systems for autonomous vehicle technology. Ground up, multi-disciplinary mechanical architecture development of compute, sensors and actuation systems. Early stage rapid design and prototype iteration, EV/DV environmental/thermal/structural testing, contract manufacturer engagement, production DFM and vehicle integration. PDM/PLM workflow, BOM management. 3D CAD, FEA, 2D drawings/GD&T. Multiple patents pending. Electronics enclosure, thermal management, precision actuator design. Extensive cross collaboration with electrical, manufacturing, systems, sensors, software teams.

APPLE – DESIGN VALIDATION GROUP – *Mechanical Engineer Intern* (Feb. '15 – Aug. '15)

Development of mechanical testing methods for product design validation. Test design, data collection, processing and analysis for design feedback to product design engineers. Fixture design for functional testing of sensors and prototypes on a variety of consumer electronic products. Development of DOEs and production line QC test method at overseas vendor site. Instron, optical CMM, DAQ systems.

CRIKSENSE – *Project Consultant* (May.'14 – Jan. '15)

Ground up development of a 3D motion and orientation tracking device and software for small-scale startup in sports analytics, focused on Cricket. Prototype of a product capable of real-time data collection, filtering and processing from 9DOF IMU, wireless communication, real-time 3D visualization, built in MATLAB.

PROJECTS

MIT d'ARBELOFF LAB *Federico Parietti, Professor Harry Asada* (Sep. '15 – Jun. '16)

Ground up design of wearable robotic limbs to supplement human activity. Optimization of prototype to improve functional requirements and reduce weight. 2DOF 3D printed ball-joint bearing mechanism. Linear actuation of an extender using pneumatic cylinders. S.B. thesis written on linear actuator position and force control scheme and experimental implementation. Design published to ISER2016.

MIT CSAIL, DISTRIBUTED ROBOTICS *Ankur Mehta, Professor Daniela Rus* (May '13 – Sep. '14)

Development of a Python software package to streamline design of printable, foldable robotics and components. Prototype design of variety of plastic origami-inspired robotics, manufactured via laser cutter and 3D printer. Characterization of mechanical behavior of plastic robot components via Instron.

MIT ROBOTICS TEAM – *Founder, Lead Mechanical Engineer* (Dec. '13 – Jan. '15)

Design of planetary rover systems to participate in NASA RASC-AL and Centennial challenges. Ownership of rocker-bogie drivetrain and chassis systems. Development of robotic algorithms for inverse kinematics control of 5DOF arm. Project lead experience of a team of ~10.

PERSONAL

- Design and manufacture of a 12 DOF custom quadrupedal robot, IK gait planning, Raspberry Pi
- Design and construction of a custom tabletop arcade game, Arduino

SKILLS

CAD: SolidWorks, SolidWorks-PDM, NX, Teamcenter
PROGRAMMING: Proficient in Python, MATLAB. Familiar with C
PROTOTYPING: Extensive experience with laser cutter, 3D printers. Proficient with 3 axis mill, lathe, shop tools.