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ROGER LO

Massachusetts Institute of Technology
Class of 2016
B.S. Mechanical Engineering

CAREER

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

Design of automotive grade hardware systems for autonomous vehicles. Ground up, multi-disciplinary architecture development of compute and sensor actuation systems. Rapid design and prototype iteration, EV/DV environmental/thermal/structural testing, contract manufacturer engagement and management, 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. Designed and built a prototype 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 properties of folded plastic 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 build of a 12 DOF custom quadrupedal robot, IK gait planning, Raspberry Pi, ROS
- Design and build of a custom bike computer with GPS and touchscreen, Raspberry Pi, Arduino

SKILLS

CAD: SolidWorks, SolidWorks-PDM, NX, Teamcenter

PROGRAMMING: Proficient in Python, MATLAB. Familiar with C, development in ROS.

PROTOTYPING: Extensive experience with laser cutter, 3D printers. Proficient with 3 axis mill, lathe, shop tools.