Alexander Malin

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Education

Rensselaer Polytechnic Institute, Troy NY — Expected Graduation: **May 2016**
B. S. Mechanical Engineering — Minor in Economics

Relevant Engineering Experience

Center for Automation Technologies and Systems — **February 2013 – Present**
Undergraduate Research

- Design and creation of a one-off adjustable pipette rest
- Programming and control of an Adept 3-axis Cartesian robot
- Design and fabrication and an actuated, protective microscope cover
- Kinematic design and prototyping of an adaptive, independent two finger gripper
- Design and fabrication of a constant-force, pneumatic end-effect for a UR5 robot
- Design of an aesthetically-constrained, very small, lightweight clamp for fishing rods
- System design of an unmanned, autonomous, aerial agriculture monitoring system
- Design of a selective optical beamsplitter assembly for a 400W IR laser
- Wiring of 3-phase and single phase devices in an industrial cabinet
- Design and assembly of a charge amplifier, including board design and SMT placement

RPI Rock Raiders – NASA Sample Return Robot Challenge — **September 2014 – Present**
Mechanical and Electrical Lead — *September – June*
Team Leader — *June – Present*

- Design of an aluminum extrusion robot chassis
- Organization, arrangement, and balancing of robot systems
- Wiring of robot's power distribution
- Management, oversight, and assistance of a dozen team members
- Complete design of a six-wheeled drive and suspension system
- Design of a hub-motor and wheel assembly
- Design and construction of a linear-actuated steering mechanism
- Streamlined unproductive meetings into coordinated working sessions

Rensselaer Motorsport — **September 2013 – May 2014**
Chassis Suspension & Aero System

- Design and simulation of a rearward wing for use on a low speed open-wheeled car, including airfoil selection, analysis, and modification
- Fabrication of wing molds using a custom hot-wire foam cutting device
- Structural analysis of a bell-crank suspension assembly for safety verification
- Detailed modeling of existing electrical connectors for collision checking

Relevant Skills

Programming: C/C++, MATLAB
CAD/Analysis: Inventor with Nastran, Solidworks, NX
System Modeling: VisSim
Other: LaTeX, Minitab, Maple