Alexander Malin

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Education

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

Engineering Experience

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

- Kinematic design and prototyping of an adaptive, independent two finger gripper for assistive robotics
- 3-Phase wiring in an industrial cabinet for a selective laser melting (SLM) machine
- Design and assembly of a charge amplifier, including board design and SMT placement
- Design, fabrication, and integration of a pneumatically actuated microscope cover
- Many other smaller mechanical and electrical design tasks

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

- Design of an odometry control processor, implemented in an Altera Max 10 FPGA
- Organization, arrangement, and balancing of robot systems in adjustable 80/20 chassis
- Wiring of robot's power distribution
- Management of a dozen team members in large combined work sessions
- Complete design of a six-wheeled drive and suspension system including custom hub-motor assemblies

Space Vehicle Design – Senior Capstone Class — **September 2015 – Present**
Primary Structures Engineer

- Selection of COTS CubeSat structure, vibration analysis to ensure integrity through launch
- Balancing of system components for optimal spacecraft dynamics
- Design of space and mass constrained stereo camera deployment mechanism

Aestus Innovation — **December 2013 – Present**
Founder

- Design, prototyping, marketing, sale, and production of a manually configurable logic gate device
- Design, prototyping, simulation, and analysis of a small-scale and low-cost electronics prototyping tool

Rensselaer Motorsport — **September 2013 – May 2014**
Aerodynamic Device Engineer

- Design and simulation of a rearward wing for use on a low speed open-wheeled car, including airfoil selection, analysis, and modification
- Construction of a hot-wire foam cutting tool for fabrication of wing molds

Skills

Programming: C (STM32, 8051, PsoC), C++, MATLAB
CAD/FEA: Autodesk Inventor with NASTRAN, Solidworks, Siemens NX
EDA: DipTrace, EAGLE
System Modeling: VisSim
Presentation and Graphics: LaTeX, Word, PowerPoint, Inkscape, GIMP 2, 3DS Max, KeyShot 5
Mathematical: Minitab, Maple, Excel