

Completed Projects

- Mock-up Circuit Board Stack
 - Worked on a large SolidWorks assembly and 3D printed multiple revisions of all circuit boards in a multi-board stack.
 - Assembled the stack, routed cables, refined standoff heights, and caught some mechanical interferences and connector misalignments.
- Suitcase Sonar and Test-setups
 - Developed and deployed an ethernet capable leak detector sensor package that successfully detected a leak in the field, protecting the custom circuitry of an expensive underwater sensor prototype.
 - Designed and fabricated a tank mount to hold an underwater sensor prototype at an adjustable angle and height.
 - Designed, modeled, 3D printed, and machined transducer holders for various tests.
 - Designed and 3D printed a limit switch for an automatic sensor positioning system.
- Submarine Model
 - Created a precise and complex SolidWorks assembly of an underwater vehicle as a graphic for an important meeting with a project sponsor.
- Novel Hydrophone Design
 - Prototyped and tested a low-cost hydrophone for Numerus Ocean of Things project.

New Skills

- Machining
 - Took a UW MechE class in manufacturing in which I created precise parts for a Stirling engine. Now I am more proficient on the manual mill and lathe.
 - Learned to use table clamps for the mill.
- Mechanical Analysis
 - Took UW classes in mechanics of materials and machine design analysis. I can now spec components and analyze factors of safety in a mechanism.
- SolidWorks
 - Through practice, I have improved my modeling efficiency.
 - I am now more proficient at working in large assemblies. I learned how to design related parts together from within an assembly so they are dimensioned relative to each other.
- Arduino and Matlab
 - Used Matlab for motor control, data collection/analysis and figure creation.
 - Developed Arduino code to integrate moisture sensors, warning lights, and an ethernet shield.
- Interpersonal
 - Practiced encouraging others.
 - Studied stress-reducing meditation techniques in India.
 - I now more readily ask others for assistance if stuck on a problem.