



We Drone!



1 - Gabe is working with another engineering student on drones under our custom build drone cages.

The IDEA Lab at SHU offers a variety of state of the art equipment available for students to use. Gabe Bitencourt, a junior computer engineering major is very keen on the drone platform lab that we have here at SHU. Engineering students who step into class are greeted with a mixture of sky and land drones. Students like Gabe are able to program them with software such as Matlab and Python to complete different tasks. Gabe explains his experience with the lab and how drone use is heavily software involved, but the outcomes you get working with these drones are useful in real world applications. Drone use is a fun way to learn more about embedded systems, and how to combine software and hardware while also having fun and learning how to channel your inner pilot!

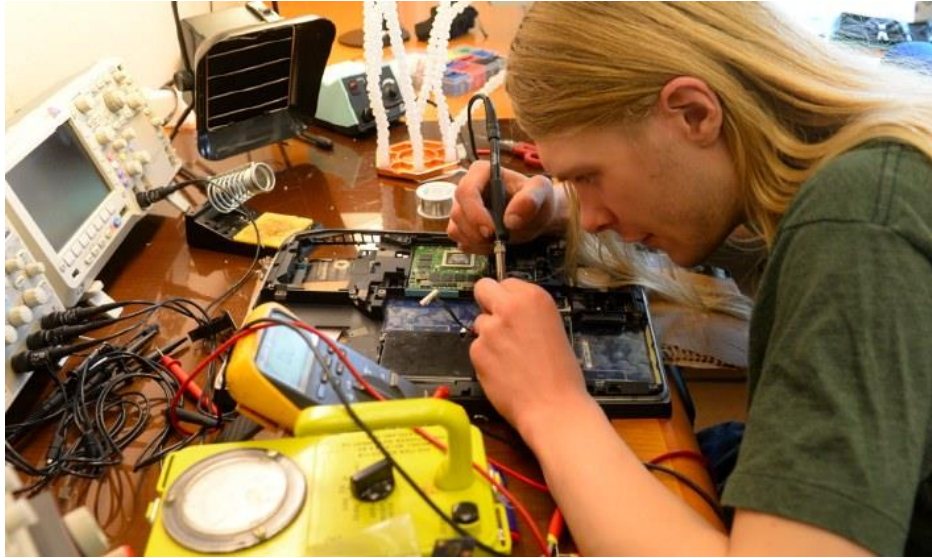
IDEA-Lab is Here...



2 - Cedric is addressing the engineering explorations class on Morse Code programming project.

An idea is all it takes to make your dreams reality here at IDEA-Lab. Cedric Bleimling, manager of IDEA-Lab explains the endless opportunities available to the entire SHU community. Staff, students, and faculty are free to come during designated open Lab Time to work out some personal projects with the help of SHU engineering students. Whether that may be creating your own pair earrings from a laser jet cutter, or designing your own sword and cutting it out, the opportunities are truly endless. Cedric's favorite part of the lab is the machine shop, you'll find lots of larger machines there, like a water-jet cutter. "What is interesting when you stay in the I Lab is you see a lot of people who are scared at first to start projects, but when they've made the first dent, they're hooked. They have this sense of "I can do it" and you start to see that passion growing". Cedric is very excited for the Sacred Heart community to learn more about IDEA-Lab, his current project he is working on along with two other students is an electronic control system called "FabApp" that will be available for other Maker Spaces to use anywhere in the world. The IDEA-Lab has created a growing community at SHU, housing not only engineers but anyone else who has a desire to learn and create.

Computer from Scratch, Literally!



3 - Shea is extracting components from old computer boards.

Computer engineering junior, Shea Sinclair has been working on a unique puzzle of his own, that puzzle happens to be building a computer...from scratch! His class on digital logic helped prepare him for such a tedious task, his months of preparation are about to pay off very soon. Shea found inspiration by looking at schematics of computers from the 70s. Though the preparation time took months, the actual assembling took less than a week! It was filled with programming, which was a challenge at first for Shea, but something he learned to enjoy. He based the architecture design off of a "6502 CPU" and hopes in the future he can work up from the time to newer computer designs. This computer does not disappoint, after facing some obstacles, Shea successfully built his computer that is able to display a custom message on an LED screen. He hopes one day he can take it a step further by using a monitor and keyboard to interact with it, and we have no doubt he can!

Congratulations Prof. Bowlyn!



4 - Prof. Bowlyn is working with Gabe and Nate on a 7-segment display implementation project.

Professor Bowlyn was granted licenses from two different companies, Intel and Xilinx, in addition to 25 floating software licenses. He proposed his idea of using FPGAs to help with research computing multiplierless fast Fourier transform system to reduce computational load of algorithms by doing image and video processing. His proposal was accepted, and companies Xilinx and Intel granted him 6 FPGAs total. This is exciting news for the engineering community at SHU as we will now have access to these FPGAs for class use, and personal use such as image processing, drone flying, the ideas are endless for students who want to do their own research.

Working in the Industry...



5 - Nate and Prof. Kaya are discussing the research project.

Over in Essex CT, Nate Barone is working on his capstone project with a fire retardant industry, TPR Squared. For this computer and chemical engineering double major, perseverance is something he is very familiar with. The challenges of working in the engineering industry have not stopped him yet, and through the challenges he has found his experience to be quite enjoyable. “After successfully creating rapid prototyped TPR products, I have been allowed to burn test them and record the data to send to my supervisors” insight given by Nate about his work experience so far. He has found working in the industry beneficial, as working with a real company helped him explore more on how the business world works.

