# Tyler Petresky

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## EDUCATION

**University of Central Florida (UCF)** Orlando, FL
Burnett Honors College
Major: Computer Engineering
Class Standing: Sophomore
GPA: 3.6 / 4.0

## SKILLS

C/C++ (10 yrs), Python (6 yrs), Java (3 yrs), HTML/CSS, PHP, Javascript, MySQL, Ruby on Rails
Electronics: Arduino (8 yrs), Raspberry Pi, general electronic prototyping/breadboarding
Communication: Public speaking, visual/auditory organization skills, typing

## EXPERIENCE

**Lockheed Martin** Orlando, FL
*Manufacturing Support Team Member Student* Aug 2014 – Present

- Develop software solutions to support the manufacturing process by the analysis of incoming data.
- Collaborate with colleagues to develop the most efficient program using Java, BASIC, and C#.

**University of Central Florida** Orlando, FL
*Undergraduate Research Assistant* Apr 2014 – Aug 2014

- Designed and produced electronic systems for the Environmental Engineering Dept using Arduino.
- Analyzed results of groundwater research to determine the best approach to solving the problem.

**University of Central Florida** Orlando, FL
*Supplemental Instruction Leader* Jan 2014 – Apr 2014

- Facilitated student learning in a peer-oriented environment.
- Led group discussions on study-skills and class material.

## HONORS

Dean's List
Pegasus Gold Scholarship
Florida Scholar's Award
National Society of High School Scholars
Florida Bright Futures Scholarship
Golden Key International Honor Society
Sigma Alpha Pi Society of Leadership and Success

## PROJECTS

**Limbitless Project – Project Manager / Electronics Developer**

- Lead a team of students to develop a 3D printed, affordable, electronic arm for children and adults.
- Analyze problems of electronic/human integration for prosthetic arms or hands.
- Collaborate with a team to design a practical and effective approach towards a solution.
- Design and wire circuitry to read voltage from muscles and control a 3D printed hand.

**Featured on: NBC Today Show, NBC Nightly News, ABC World News Tonight, FOX News, BBC World News** and in over 25 countries.
**To Be Featured in: National Academy of Engineering Centennial Book, Healthy Living, Educational Broadcasting Station in South Korea, and more.**
**To receive Grammy style award at the Two Bit Circus STEAM Gala in Los Angeles.**

### Engineers Without Borders (EWB) Software Team Leader

- Manage a group of students, with varying ranges of software experience, into one coherent team.
- Facilitate an atmosphere focused on learning through application.
- Various projects include applications in image processing, quad-copters, integrated networks, etc.

### Engineers Without Borders (EWB) Weather Station

- Created a device that is completely weather proof and portable while remaining fully functional.
- Integrated multiple sensors: light, temperature, wind speed, wind direction, rain, and RTC clock.
- Designed circuit and operating parameters on a Raspberry Pi for constant data collection.
- Integrated a satellite unit to transmit collected data from the country of deployment back to UCF.

### Personal Website (tylerpetresky.com)

- Create a visually appealing, yet functional, website for personal business use.
- Ensure dynamic sizing and other functions to maintain appeal in various settings (desktop/mobile)
- Utilize HTML, CSS, JavaScript, PHP, and MySQL together to achieve a seamless website.

**Code for my website can be found on Github:** http://bit.ly/XBWoI7

### SfTileEngine Project

- Planned and designed a fully functional and easy-to-use tile engine library using C++.
- Ensured the correct parsing of XML tile map files that have Base64, GZIP, or no compressions.
- Incorporated external libraries, such as TinyXML, into my own library to ensure the best quality.
- Compiled library into a DLL that can be transferred easily.

**Code for SfTileEngine can be found on Github:** http://bit.ly/XBX6VL
**Example of SfTileEngine execution can be downloaded here:** http://bit.ly/1qsd1fP

### Physics Simulation Project

- Implemented basic mechanical physics into a C++ program that generates basic shapes.
- Utilized third party libraries, such as Box2D and SFML, to accomplish a high quality product.

**Executable Physics Simulation file can be downloaded here:** http://bit.ly/1kWYpIL

### Pong Project

- Created a simple, interactive video game as a one-night project to test my C++ skills.
- Demonstrated the use of various technologies: 2D graphics, event handling, state machines, and audio.

**Executable Pong file can be downloaded here:** http://bit.ly/1kWY2hk

### All Night Hackathons

- Gather with friends to code fun and exciting projects all night long.
- Consume exceptional quantities of caffeine and pizza.
- Generate one-night projects such as an extensible, voice controlled office assistant in Python.

### Junior Achievement

- Volunteered at a Title I school for 6 weeks and gave lessons to 5$^{th}$ graders.

## RESEARCH

### Automatic Water Sampler for Detection of Nutrient Gradient in a Pond

- Cooperated with a colleague to come up with a list of requirements for an automatic water sampler.
- Designed, constructed, and programmed the circuitry to operate a water sampler in the field.
- Integrated radio communications, cellular networks, pump control, and other systems together.
- Ensured that the sampler is remotely activated by cellular text messages.

**Research Paper:** *In Perpetration*
"Autosampler Network for Nutrient Flux Determination in Stormwater Retention Pond"
Authors: **Tyler Petresky**, James Crawford, Ni-Bin Chang.