Jonathan A. Shields

EDUCATION

Cybersecurity, MS   Dec. 2018
University of Alabama in Huntsville   GPA 4.0/4.0

Bachelor of Science in Computer Science   Dec. 2017
University of Alabama in Huntsville   GPA 4.0/4.0

WORK EXPERIENCE

Software Programmer   **Feb 3, 2019 - Present**
Boeing: Commercial Crew Team – Star Liner Gap Analysis   Huntsville, Alabama
- Member of the gap analysis audit team responsible for analyzing and reviewing the software code/requirements
- Analyzed the test cases for the CSCI's that make up star liner and made sure they met the requirements
- Analyzed 510 total requirements and identified 61 gaps between the software test code and the SRS documentation
- Created the approach to perform the gap analysis for the Crew Module requirements
- Created a report that mapped the Crew Modules, Integrated System Verification Tests, Verification Activities, and System Software Requirements together
- Analyzed test cases to determine which ones will be good candidates for Crew Telemetry Integration
- Created an approach to increase the traceability between requirements and testing that would benefit the entire company

Software Programmer   **May 19, 2017- Nov 27, 2019**
Boeing: ISS Vehicle Test Team – Web Developer   Huntsville, Alabama
- Member of the testing team responsible for testing the software that is being used on the International Space Station
- Created a Web Application in ASP.Net using C# that manages the scheduling and execution of all the test cases
- Created a Dynamic Link Library to handle all of the Database Interaction for the web application
- Designed a User Interface for the web application that is intuitive and coherent for the test analyst.
- Analyzed the current testing process online and provided helpful recommendations to management.
- Integrated the web application with the testing environment that is "mirroring" the mate configurations on the ISS

Software Programmer   **March 15, 2019 – Nov 5, 2019**
Boeing: ISS Vehicle Test Team – Automation Regression Testing   Huntsville, Alabama
- Served as the lead of a team responsible for developing an automation tool to assist in regression testing
- Created the foundation and architecture of how the entire tool should look and operate
- Created an automation tool that reduced the regression testing time from ~5 hours to ~ 8 minutes
- Designed the tool in such a way where it has the ability to scale up to take on more test cases if desired by the team

Software Programmer   **Jan 2, 2019 – Feb 4, 2019**
Boeing: ISS Vehicle Test Team – Automation Ethernet Analysis Tool   Huntsville, Alabama
- Created an Ethernet Analysis tool in python that analyzes the HRDL data sent from the space station to Earth
- The Tool is able to read in pcap files through the dpkt library and parses through over 20,000 lines of information
- Created and configured a Kali Linux virtual environment using Oracle Virtual Box

Software Programmer   **May 8, 2018- Oct 5, 2018**
Boeing: ISS Vehicle Test Team – Automation Excel Analysis Tool   Huntsville, Alabama
- Created an Automation Tool that analyzes 100+ excel sheets to produce a final report
- Increased efficiency in the workflow by reducing the time of execution from 6 hours to 2 minutes.
- Created a GUI component that allows the user to interact with the automation tool

Business Analyst Intern   **May 31, 2016- July 29, 2016**
Regions Financial   Birmingham, Alabama
- Member of QA test automation team responsible for applications used in over 1,500 branch locations.
- Aid in the clean-up and maintenance of over 15,000 lines of source code, decreasing runtime of test automation scripts.
- Execute test runs and analyze failures using HP Unified Functional Testing software.
- Perform gap and feature analysis of top software automation toolsets and provide recommendations to management.

PART TIME OCCUPATIONS

Instructor at the University of Alabama in Huntsville: **January 2019 – Present**

I am currently a part time instructor at the University of Alabama in Huntsville where I am responsible for teaching CS 121. CS 121 is a C++ class geared towards freshmen and sophomores. This class is designed to teach students the fundamental principles and logic of programming. I have designed a 16 week curriculum, approved by the college of science, which goes over the basic foundations of programming such as if/else, loops, functions, File I/O, and classes. I also teach the first year experience class which is a class every freshmen must take. This class is designed to equip the freshmen with the necessary tools they need to be successful in both their academic and professional journey.

PERSONAL PROJECTS

Modern Battleship Prototype: **April 2020 – Present**

I am currently working on a "modern" take on the classic game battleship. The goal of this prototype is to take the basic concept of battleship (the grid system) and re-imagine what the game could like from a more modern, strategic perspective. Instead of placing ships, players will have the ability to place units on the grid. Each unit will have its own set of attributes and abilities that players can use in the game. The player with the most units remaining by the end of the game wins. The direction of this game is inspired by "Battleship", "Fire-Emblem", and strategic warfare games.

Mobile Sandbox/Puzzle: **May 2017 – December 2019**

I created a mobile sandbox prototype that gives players a unique experience. Players have access to a central "hub" where they can interact with NPC's and different shops. From the "hub" world, players can then explore multiple "mini-games" that will contribute to unlocking the secrets that are within the "hub" world. The direction of this game is inspired by "Pocket God", "Bio-Shock", and "Club Penguin".

Arduino Robot: **March 2019 – April 2019**

I programmed a robot using two Arduino boards. One Arduino board was responsible for controlling the gas sensor unit of the robot. The smell sensor was a sensor that was able to detect certain gases such as carbon dioxide, methane, and LPG. Whenever the sensor picked one of these gases it would make a loud beep and notify the user the type of gas through the LCD screen. The second Arduino board was responsible for controlling the wheels and the eye senor unit of the robot. Essentially the robot was able to move on its own in any flat environment and avoid obstacles using the eye senor. I also had to two synch the two Arduino boards together so that the robot will move autonomously until it detected a certain gas.

Platformer: **June 2016 – August 2016**

I created a video game that is currently playable on my cell phone (Samsung Galaxy S7), this is a simple platformer game where the player is tasked on falling down and landing on the good clouds (white clouds) while avoiding the bad clouds (dark colored clouds). I made this game using the engine known as Unity and the language that I used for the programming was C#.

CLASS PROJECTS

Cybersecurity Requirements Verification: **Fall Semester 2017**

This project was completed using a Virtual Machine running the CentOS Linux v7 GNOME desktop environment. I was tasked with making sure the environment was in compliance with the security requirements from NIST 800-171r1. Using the SCAP Workbench application I analyzed the VM environment in order to figure out all of the requirements that were not being satisfied. From there, I had to change certain settings within to environment for the requirement to be met. For the requirements that were not able to be satisfied, I had to provide an alternative solution to be used as a workaround. I also created a forty eight page document detailing all of my work that was done in the report.

Teacher Grading Application: **Spring Semester 2017**

This project was completed using Java and the IntelliJ IDEA IDE. I was tasked with creating an application that will allow teachers to manage grades, students, and academic records for multiple classes and semesters. I was in a group with two other people and had to serve as the team lead. As the team lead I had to maximize the skill set of the other two members in a group in such a way that allowed for the project to stay on schedule and to be completed by the deadline. I also had to pull majority of the weight by learning the concepts that were unfamiliar at the time and then implementing them in the project. The application contain majority of the standard features that are in existing applications such as Canvas or Blackboard.

TECHNICAL/PRACTICAL SKILLS

• ASP.Net Web Programming	• Game Director	• Gameplay/Programmer
• Unity Game Engine	• Leadership	• Arduino
• C#	• Communication	• C++
• Mobile App Development	• UI Design	• Python
• Teaching	• SQL	• PHP