Patrick Woodburn, Software Engineer

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SUMMARY

A software engineer passionate about emerging technologies that allows users to interact with the world around them.

EXPERIENCE

Thamas Jefferson University - Dice Group, Software Engineer Dec 2017 — Present
https://www.dicegrp.org

- Lead embedded software engineer for the Internet of Things team.
- Worked on software that drove the first ever HIPAA compliant smart speaker.
- Build APIs that allowed for internet connected devices to communicate between each other for the purpose of controlling equipment in a hospital setting.
- Wrote Linux scripts used to manage a suite of software focused on the embedded platform.
- Built a system for intercommunication between APIs and firewall protected embedded systems.
- Designed a system for delivering software updates leveraging MQTT events.
- Used the Google Cloud Platform to control and maintain numerous Jefferson IoT projects.
- Improved data flow between existing APIs to ensure negligible delay between interconnected systems.
- Lead conversations on uses, pros and cons and implementation of IoT networks including LoRaWAN, Bluetooth, WiFi, and cellular within the engineering team.
- Designed and created prototypes of simple electrical circuits for small batch products on experimental IoT and embedded system projects.
- Designed 3D printed short run rapid protype housings for early phase projects during the proof of concept stage.
- Created an interface for controlling Docker over the MQTT network.
- Maintained Docker images for testing embedded software in order to eliminate the need for physical hardware.
- Created work flows for using Docker on embedded systems.
- Created systems to automatically and dynamically deploy software to embedded hardware.
- Implement Redis as a low lag reliable cross application key store and communication bus solution.

Comcast, Software Engineer Mar 2015 — May 2017
http://www.xfinity.com

- Designing and developing home security and home automation systems.
- Operating within a team of developers to develop and test a new home automation system.
- Working with internet connected devices to automate and secure user's homes.
- Developing android apps that could run against a users unique home automation system.
- Using testing tools such as junit and espresso to create test code to run against android apps for continuous integration.
- Building test kits to simulate devices in a normal user home.
- Creating technical documentation for both installers and tech support to use when assisting users.
- Setting up continuous integration environment using Jenkins.
- Scripting of tools to deploy to and debug on custom android firmware.
- Developing software to communicate over wireless interfaces such as bluetooth, WIFI, and Zigbee.

Independence Blue Cross, Software Engineer Aug 2014 — Feb 2015
http://www.ibx.com

- Writing secure access software for customers to access their person private insurance information.
- Implementing given designs so that users may have the most comfortable experience possible when accessing their insurance information.
- Creating cross platform mobile apps that could be rebranded for multiple insurance companies.
- Porting functionality of apps between incompatable code repositories.

BioHitech America, Intern Jan 2014 — Jul 2014
http://www.biohitech.com

- Developing Linux-based software to run on industrial organic digester.
- Developing software to run on headless industrial machinery and preform analytics on their use.
- Set up and maintained Linux devices to be used in embedded industrial applications.
- Creating static environment configuration for large numbers of linux machinery and virtual machines.
- Developing Kiosk software to be be able to track metrics from items scaned with nfc chips.
- Developing webpages to pull from various restful APIs.
- Creating firmware to drive touchscreen pannels.
- Researching and retrofitting new hardware for industrial grade machinery.

Franklin Institute, Teacher Apr 2006 — Jun 2019
http://www.fi.edu

- Teaching robotics to high school students.
- Planning lessons on the topics of electrical and software development.
- Teaching students how to program and build circuitry required for multiple applications of robotics.
- Working with students to build robots for various competition and museum displays.
- Documenting use and maintenance of student's projects to be handed off to groups tasked with operation through museum.
- Building software tools that the students can use to better debug their projects.
- Presenting and demonstrating robotics projects to large groups of people.
- Operating robots in around the museum.

VOLUNTEERING

Code for Philly, May 2011 — Jan 2016
http://www.codeforphilly.org

- Developed Open source software for the betterment of conditions in Philadelphia.
- Acted as a subject matter expert on developing API's and integrating them into web and mobile apps.
- Creating Websites for community service projects.
- Building apps to help transform improve communities within the city.
- Developing APIs to open up public data from the city.
- Helping others to bring up and configure their server solutions on a project to project basis.
- Building data scrapers to bring data into databases from other sources.

EDUCATION

Harrisburg University Of Science And Technology Sep 2010 — May 2014
Bachelor - Computer Information Sciences, GPA: 3.4 Major

SKILLS

Software Engineering: Java, C++, Python, Android, HTML, Object Oriented Programming, JavaScript, Nodejs, Git, Linux, rxJava, php, bash, jQuery, React Native, Jenkins, Docker, ansible, cloud, embeded, data

Electrical Design: Circuit Design, Prototyping, soldering, CAD

INTERESTS

Robotics *[Internet Of Things, Electrical, Control Systems, Electrical, Control Systems, Embedded, BLE, radio, microcontroller, arduino, PIC, AVR, Arm]*, Artificial Intelligence *[AI, Neural Networks, Big Data]*, Home Automation *[Internet Of Things, Electrical, Control Systems, Embedded, Wireless, BLE, mqtt, Zigbee, xbee, ZWAVE, arduino, microcroller, PIC, AVR, Arm]*, Embedded Systems *[Linux, Micro Controller, PIC, AVR, Arm]*, 3D printing *[CAD, CNC, Rapid prototyping]*