Benjiman Walsh

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Professional Summary

Skills

- Systems Administration
  - Leaned skills needed to troubleshoot computer hardware, operating systems, virtual machines and application software
  - Learned how to inherit subpar systems and contribute meaningfull documentation and advice for leadership
  - Learned extensively how virtual machines and containers are used in a production environment
  - Learned how to use automation tools such as ansible in a production environment
  - Learned the importance of continuous integration/deployment for a production environment
  - Attained knowledge that filled in the gaps between other coursework
  - Learned how to use and configure task schedulers
  - Plan, install and troubleshoot LANs and WANs
  - Work in a team environment
- Digital Logic and Design
  - Learned how to use logic gates to design digital systems
  - Learned how to use hardware design languages (SystemVerilog) to model logic and hardware to program FPGAs
- Software Engineering
  - Learned about the Software Development Lifecycle and its importance
  - Worked on multiple group projects, learning teamwork and leadership skills
  - Learned the difference between Agile and Waterfall methodologies and where they are used
  - Learned multiple software testing frameworks which all included black box testing, unit testing, integration testing, system testing and acceptance testing
  - Learned about various software design patterns and where they are useful
- Cloud Application Development

  - Learned how to engineer basic cloud applications
  - Used containerization to deploy a RESTful API backed up by noSQL and SQL databased, caching services, and messaging services
  - Worked in a term long group project, leading my group to success by documenting a github flow branchin strategy early on and assigning issues
  - Learned how to use docker and docker-compose efficiently to build web applications without needing to install and manage dependencies locally
  - Used multiple API testing tools including cURL and Postman

- Computer Graphics
  - Built various programs using OpenGL that demonstrated advanced knowledge of the computer graphics pipeline

- Computer Architecture
  - Learned the innerworkings of a processor across multiple architectures
  - Learned how to program in assembly using an Instuction set architecture
  - Used Atmel Assembly to program an Atmega128 to perform various high level tasks

- Translators
  - Learned the innerworkings of a compiler (how to scan, parse, abstruct and construct other languages)

- Data Structures/Algorithms
  - Learned how to structure data and optimize how it is used for algorithms
  - Learned the importance of data stuctures and algorithms in theory, and used this knowledge to build these concepts in code
  - Learned how to model code using pseudo code and use discrete math to optimize and model code.

- Relational Databases
  - Learned how to model data storage needs using relational algrebra
  - Learned how to deploy real web applications that use a relational database
  - Worked within a group to give a web application access to an SQL database
  - Learned how to normalize a database to the fourth normal form

- Operating Systems
  - Learned the components of a modern day operating system
  - Learned how to build shells, operating system aware apps and take advantage of mutexes and parralism

- Learned how to build a basic kernel (JOS), implementing booting, memory management, user environments and preemptive multitasking
- Learned how to maintain, diagnose, patch and efficiently use linux and windows operating systems

Projects

Taurpalin API 2022

- Used a Github Flow branching strategy
- Led a successful project using tools on github
- Demonstrated and in depth understanding of containerization by designing a docker-compose app that every team member could use without installing any local dependencies
- Communicated efficiently with teammates of multiple skill levels to get project done ahead of schedule and stuck to initial plan

Virtual Automotive Cluster 2021

- Used OpenGL to build a working dashboard cluster that contained a working speedometer, tachometer, fuel guage and temperature guage.
- Coded in C++, FreeGlut, OpenGL, using shaders, textures, animation
- Used a basic Makefile to compile multiple files and parts

JOS Labs 2021

- Worked individually to build MIT's Operating Systems Engineering JOS kernel
- Implemented booting, memory management, user environments and preemptive multitasking
- Used ctags, tmux, vim and qemu to develop project on a school server
- Used advanced knowledge of GDB to debug and understand the assembly being ran from compiled code

FPGA Design Project 2019

- Worked on a small team to build multiple device drivers for an Intel FPGA
- Built a driver for the seven segment display, a NES controller, audio output and VGA output using SystemVerilog
- Demonstrated advanced knowlege of digital design methodology, and documentation using LaTex
- Used git to collaborate across as a team and manage code

Experience

Telematics Developer 2021 — 2022
Global Formula Racing | Corvallis, OR

- Took responsiblity for a full stack project
- Attended meetings multiple times a week, presenting project progress twice a week
- Worked on-site and remotely with an international team
- Communicated complex computer engineering ideas to a mu ltidisciplinary team
- Worked independently
- Deployed a containerized data collection application on a driverless racecar collecting
- Worked with Robot Operating System (ROS) for the driverless systems and Controller Area Networks (CAN) for the electric car
- Used an agile methodology to develop the backend end and test and rule out multiple already established front-end applications
- Assisted teammates in building and documenting GFR's software stack
- Contributed to the computer vision portion of the stack, using OpenCV

Warehouse Associate 2019 — 2021
Amazon.com LLC | Troutdale, OR

- Attended daily stand up, worked independently to meet hourly and daily goals
- Worked alongside robotic assemblies and assisted in troubleshooting errors
- Worked with a complex inventory management system with a Linux POS

Barista 2017 — 2019
Dutch Bros. Coffee | Springfield, OR

- Worked graveyard shifts alone during busy weekends, while going to school during the week
- Leaned a documnented process in order to achieve a flow state and produce coffee rapidly
- Always focused on customers, to improve their days and serve them a good coffee and experience

Education

Bachelor of Computer Science 2018 — 2022
Oregon State University | Corvallis, OR

- Cum Laude, GPA 3.67
- Computer Systems, ABET Accredited
- Ford Scholar

Rotary Youth Embassador 2015 — 2016
Instituto Menendez i Pelayo | Barcelona, Spain

- Studied in Catalan and Spanish
- Made social and professional connections with Rotarians
- Learned leadership skills that forever altered perception of education and life

Certifcations

Fluent in Spanish, B1 level 2016
Instituto Cervantes | Madrid, Spain