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Summary

Software engineering student looking to join a team with the goal of positively impacting complex vertical products in creative ways. Industry experience in web development. Interest and school project experience in digital logic design as well as several tools and programming languages. A diligent independent worker with a team/community oriented mindset. Interested in software development environments that are conducive to creativity and thinking like a user. Searching for opportunities to apply and grow my current skills, learn new ones, impact others, and help fund education.

Oregon State University Bachelor of Science

Major: Computer Science, Systems
GPA: 4.00
Expected Graduation: June 2023

Skills

Languages: C/C++, Python, Ruby, SQL, Kotlin, Haskell, AVR Assembly, JavaScript
Technical Tools: Rails, System Verilog, Quartus Prime, ModelSim, Latex, HTML & CSS
Interests: Woodworking, Exercise & Fitness, Cooking, Painting

Work Experience

Software Engineer Intern @ Lumen Learning (Oct. 2021 – Present):

Primarily worked on backend projects in **Ruby** (on Rails) to deploy scalable, effective, reusable, and explicable code in a timely and organized manner. Other languages include some Javascript and SQL. Worked within an agile software development environment: participating in scrum stand-up, managing sprint tickets, adding and updating backlog, communicating holdups and rollovers.

Deliverables:

Deprecate Outdated Software:

Researched and orchestrated the migration of relevant data from old software to newer - process involving the utilization and understanding of two distinct APIs to create new content and replace existing content. Considerations roped in UX, learning, and accessibility teams for a culmination of stakeholders involved in the project.

Combined Courses:

Project focused on equipping the learning team with tools necessary to combine existing courses into one student experience. Involved recursively traversing database structures of courses and merging content from multiple sources under one course tree.

Course Development Intern @ Lumen Learning (Jan. 2021 – Sept. 2021):

Performed a variety of open education resources improvements. Responsibilities related to communicating with manager and colleagues on requirements and for assistance when necessary. Primarily consisted of asynchronous work on large projects.

Deliverables:

Learned and wrote mathematical equations in **Latex** for Calculus courses.

Formatted 500+ **HTML** tables for new Accounting course: created adaptations to the provided template as required by accounting table standards. Included auxiliary work with embedded **CSS** styling additions/adjustments.

Projects

Personal Finance Tool:

Developed a finance program in **Python** for personal use.

Front-end interfaces the Tkinter GUI library with the database to view, analyze, filter, and manipulate financial data:

-Allows for Open Financial Exchange (OFX) files or manual upload of financial transactions
-Displays adjustable graphical data illustrating spending trends over time and by category
-Filters database entries by category, date, name, and price, and allows for edit and delete operations via **SQL** queries

Back-end automatically categorizes transactions:

-accepts OFX, parses, and stores each transaction entry
-queries the name of each transaction using google search engine
-grabs the pure text from the HTML of the first 3 search results
-scores the transaction with hash of keywords associated with each category
-returns the to-be-confirmed array of transactions with assigned categories

Cryptography Hybrid Proof DSL:

Implemented a simple **Haskell** DSL for representing cryptography hybrid proofs.

Primary focus resided in deconstructing visual proofs into data and type-oriented constructs, such as cryptographic libraries, routines, subroutines, indistinguishability vs. interchangeability, etc. Also explored Latex conversions and automating common transformations between the steps of proofs, such as in-lining subroutines.

Android Meal Planning App:

Built an **Android mobile application** in **Kotlin** for meal planning.

Connects users with a calendar to select dates for which they wish to construct meals, as well as the storing of recipes for later use. Interfaces with the USDA food API to fetch retail food item data, which can be added to meals as ingredients and to compute nutritional information. Utilizes Android Jetpack, Room, Moshi dependencies.

PS/2 Controlled Piano:

Created a model for Intel FPGA HW that would produce musical frequencies given keystroke signals from a PS/2 keyboard.

Used **Quartus Prime** and **SystemVerilog** to design the digital logic necessary to relate PS/2 signals to output frequencies:

-Used an 11-bit shift register (D-Flip-Flop in-series) to collect all bits from the keyboard input

-Verifies exactly 11 bits have been received by incrementing a count on the rise of each incoming PS/2 clock signal
-Utilizes a decoder to relate the hexadecimal input to a frequency
-Uses the system clock (50 MHz) to count to a number at the frequency specified by the decoder
-For half of the cycle, the output signal is high, and the other half is low, producing a square wave oscillating at the specified frequency

Simulated design using ModelSim SW, allowing for 8 different musical notes (keystrokes) to be received as inputs.

Small Shell:

Created a miniature Linux shell program in **C** that supported basic CL functionality
-supports the cd command, i/o redirection, and variable expansions
-maintains a status for exits and signals
-runs background processes as separate child processes
-uses exec functions to run Linux commands (ls, ps, etc.)
-ignores the Linux interrupt signal (SIGINT)
-terminal stop signal (SIGTSTP) enters into foreground-only mode (no background processes)

OSUThrift:

Designed a website that models an online thrift store for Oregon State University students.
Generated the website from scratch using **HTML**, **CSS**, and **Javascript**:
-Create new posts: description, price, image, contact info, password protection
-Delete posts upon entering the correct password associated with the post
-Toggle between image and details by clicking on the image pane

Community Involvement

Phi Kappa Psi Oregon Beta Chapter:

Community Service: 30+ hours of local service per year

Website Publisher: responsible for the updating and maintenance of the chapter website phipsi.org: content generation, styling.

Kitchen Manager (Aug. 2021 – present): organize and manage cleaning groups, ensure the cleanliness of the cooking and dining area, and maintain a positive relationship with the cook

Membership Development Chairman (Apr. 2021 – Sept. 2021): record member activities, organize point-based rewards system for members

Community Service Chairman (Feb. 2021 – Sept. 2021): Connected with local organizations, communicated opportunities with members, organized & participated in events

Courts for Kids Volunteer Immersion (June 2018 – 10 days):

Constructed a multi-purpose sports court in Guayabo, The Dominican Republic**.** Fundraised over $1000 to finance the trip.