Teagan Horkan

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EDUCATION
University of Washington, Seattle, WA
> **BS Computer Engineering,** Paul G. Allen School of Computer Science & Engineering
> **Senior** • Graduating **December 2019** • **3.85 GPA**

EXPERIENCE • C++ • Python • Java • C
Software Engineering Intern, Routing/Switching Protocols, Arista Networks, Santa Clara, CA   Summer 2019
- Developed in C++ and Python to implement IETF RFC 4604 which prevents stoppages in multicast traffic
- Wrote extensive unit testing and product testing in Python
- Delivered a customer impacting fix within target deadlines
- Gained real-world knowledge of network industry and distributed systems

Software Engineering Intern, rGuest Stay, Agilysys Inc., Bellevue, WA   Summer 2018
- Created a data migration tool for test environments and integrated it into internal test environment monitoring server
- Revived JaCoCo/SonarQube code coverage reporting for all rGuest Stay services
- Built an annotation driven framework for providing a data history to clients
- Implemented a concurrent MongoDB collection to manage a task processing queue

Teaching Assistant, University of Washington   Winter 2017 – Winter 2018
- Basic data structures, generics, and polymorphism in Java
- Low level data representation and bit-level manipulation in C and x86-64 assembly
- Cache concepts and optimization • heap management and implementation • virtual memory

Instructor, Coding with Kids, Redmond, WA   Summer 2017
- Taught K-12 students computer science concepts in Java and JavaScript

PERSONAL PROJECTS
Parallelized 2048 Game AI • Python
- Uses Monte Carlo methods across multiple CPU cores to beat the 2048 game
- Provides API for other AI and can also be played by user in a terminal
- Wins game in under 1 minute and can achieve scores of up to 8192

Discord Bot & Website • NodeJS, PHP, MySQL, HTML, CSS
- Sends image links posted in Discord server to a database and dynamically displays them on a website
- Minimal downtime: Hosted on home server as linux service, auto restarts on crash or power failure

Bezier Curve Library • Python
- Small library for graphically rendering n-degree Bezier curves
- Wrote a graphical program using pyglet for drawing smooth curves similar to a vector art pen tool

Maze Generator and Solver • Java
- Random recursive generation of rectangular mazes
- Finds shortest path to finish using Dijkstra's algorithm
- Provides visualization of search across the maze

CLASS PROJECTS
Sensor/ML Driven LED Display • C, MicroPython
- Combines sensor inputs, including microphone, temperature and accelerometer to drive an LED Display
- Utilizes edge machine vision to recognize gestures that control the display

Autonomous "Racecar" • Python
- Built AI for the UW MuSHR project, an open platform for autonomous vehicle research
- Contributed to the LIDAR localization, graph search path planning, and physical control modules
- Our AI won first place in final project demos by passing all waypoints in the shortest amount of time

Bluetooth Controlled RC Car • C, FreeRTOS
- Designed, manufactured and programmed an RC car that can be controlled via Bluetooth from a phone
- Uses embedded modules like UART, I2C, PWM to communicate and control drive and servo motors
- Implemented an I2C driver on the TI TM4C123GXL board for an MPU6050 accelerometer