Isabella Laybourn

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Education

Carnegie Mellon University | 2019 – 2023
Bachelor of Science in Computer Science
Concentration in Software Engineering,
Minor in Animation and Special Effects
Dean's List Fall 2019

Stanford Online High School | 2015 – 2019

Projects

Mutation-Guided Fuzzing | Spring 2021
- Created mutation analysis functionality in Java for use in guided fuzz testing.

Biometric Shirt | 2018 – Present
- Programmed biometric shirt using LEDs to monitor temperature and activity for a Dravet Syndrome patient
- Created two working prototypes using Arduino, Adafruit, and Particle IoT boards
- Testing a feature that writes gathered temperature/activity information to a ThingSpeak channel

Game Bytes | Fall 2019
- Programmed and animated actors in sports-themed fighting arcade-style minigame Sporshmallow in Unity with team for CMU's Game Creation Society

Transitions and Effects | 2017 – Present
- Programmed 2D video effects and transitions, including feathered wipes and a background-agnostic chroma key (green screen effect)

Relevant Coursework

15-213 Introduction to Computer Systems
15-259 Probability and Computing
17-355 Program Analysis
17-214 Principles of Software Engineering
15-210 Parallel Data Structures and Algorithms
15-251 Great Ideas in Theoretical CS
15-150 Principles of Functional Programming
15-122 Principles of Imperative Computation

Skills

Programming Languages: Java, Python, C, C++, Go, SML, C#, Arduino, Particle, HTML, LaTeX
Programs: Adobe (Premiere Pro, Photoshop), Autodesk Maya, Unity, Docker, AWS, git, bash

Experience

Salesforce | Summer 2020
Infrastructure Security Intern (REDSCAR Team)
- Categorized over 600 security bugs filed by Infrastructure Security Advisory team and collaborated with Secrets team to uncover best areas and develop automated support for secret rotation
- Integrated secrets management program Vault and internal database GUS APIs with Python script for AWS Lambda and Go program in Docker container
- Performed design review for security assessment

Carnegie Mellon University | Fall 2020
Teaching Assistant, 15-151/21-128
- Taught weekly recitations, held office hours, and graded homework and exams
- Helped students understand and apply class concepts including logic, functions, and probability

Cyber Crucible, Inc. | Spring 2020
Software Engineering Intern
- Developed voice recognition software for security authentication in Java to be used in an Android app
- Integrated REST APIs with Android app

Wired Wolves Robotics Club | 2017 – 2019
Team Leader/Programmer
- Leader and sole programmer for the Wired Wolves in the 2017-18 and 2018-19 First Tech Challenge robotics competitions (Alaska State Control Award in 2019)

Girls Can Code Club | 2015 – 2019
Club Leader
- Taught Python and Unity
- Participated in app-building competition Technovation 2017 and 2018 (semifinalist) and mentored other participants