

Isabella Laybourn

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EDUCATION

Carnegie Mellon University

Pittsburgh, PA

B.S. Computer Science, Concentration Software Engineering, Minor Animation and Special Effects

May 2023

- Dean's List Fall 2019

- Relevant Coursework:

15-151 Mathematical Foundations of CS	15-251 Great Ideas in Theoretical CS	15-213 Intro. to Computer Systems
15-122 Principles of Imperative Comp.	15-210 Parallel Data Structures and Alg.	15-259 Probability and Computing
15-150 Principles of Functional Prog.	17-214 Principles of Software Eng.	17-355 Program Analysis

WORK EXPERIENCE

Salesforce

(Remote)

Infrastructure Security Intern

May 2021 – August 2021

Infrastructure Security Intern, REDSCAR Team

June 2020 – August 2020

- Categorized over 600 security bugs filed by Infrastructure Security Advisory team
- Collaborated with Secrets team to investigate 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
- Learned about and performed design reviews for security assessment

Cyber Crucible, Inc.

Pittsburgh, PA

Software Engineering Intern

January 2020 – May 2020

- Developed voice recognition software for security authentication in Java to be used in an Android app
- Integrated REST APIs with Android app

Evalulogic

Sitka, AK

Data Analysis Intern

July 2019 – August 2019

- Analyzed and designed more than 100 Excel graphs sorting and depicting information from 2 surveys of high school students regarding usage of and attitudes toward controlled substances
- Formal presentation of the data to client Sitka Counseling at their monthly meeting

ACADEMIC EXPERIENCE

SIGGRAPH Student Volunteer, VR Theater

May 2021 – August 2021

Undergraduate Research

January 2021 – May 2021

- Created mutation analysis-based guidance plugin for fuzzer JQF
- Programmed mutation analysis functionality in Java
- Currently working toward testing mutation-guided fuzzing on large benchmarks for catching security vulnerabilities

Teaching Assistant, 15-151/21-128 Mathematical Foundations of Computer Science

August 2020 – December 2021

- Taught weekly recitations, held office hours, and graded homework and exams
- Helped students understand and apply class concepts including logic, functions, and probability

Wired Wolves Robotics Club

2017 – 2019

- 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

- Taught Python and Unity as club leader
- Participated in app-building competition Technovation 2017 and 2018 (semifinalist) and mentored other participants

Summer Volunteer Course Instructor, Sitka Public Library

June 2016 – July 2018

- Designed and taught workshops in Scratch, MIT App Inventor, Web Development, and Video Editing

PROJECTS

Game Creation Society

September 2019 – December 2019

- Programmed sports-themed fighting minigame Sporshmallow in Unity with other team members

Biometric Shirt for Dravet Patient

2018 – 2019

- Programmed biometric shirt using LEDs to monitor temperature and activity for a Dravet patient
- Created two working prototypes using Arduino, Adafruit, and Particle IoT boards
- Tested a feature that writes the gathered temperature/activity information to a ThingSpeak channel

Transitions and Effects for AMVs

2017 – 2019

- Programmed 2D video effects and transitions, including feathered sweeps and a background-independent chroma key

SKILLS

Programming Languages: Java, Python, C, C++, Go, SML, OCaml, C#, Arduino, Particle, HTML, JavaScript, LaTeX, bash

Programs: Adobe (Premiere Pro, Photoshop), Autodesk Maya, Unity, Docker, AWS, JQF, Maven, Soot, git, vim