# CHRISTINA DAO

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## Education

**University of Maryland, Baltimore County**
Bachelor of Science in Computer Science, *expected December 2023*
• Scholar of UMBC's Center for Women in Technology Scholars Program

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## Work Experience • (U.S. Citizen, Secret Clearance)

**Northrop Grumman SWE Intern**                                         *June 2023-August 2023*
• Member of the Ground/Air Task-Oriented Radar (G/ATOR) Test Automation Team, contributing to a classified project that leverages machine learning algorithms to automate test result analysis and determine feature importance of data
• Utilized Scikit-learn, Pandas, Numpy, and Matplotlib for data preprocessing, training, and implementation of the Random Forest model to establish a pass-fail criteria which is used to evaluate hundreds of new MATLAB test result files to predict their success

**National Science Foundation Research Intern**                        *June 2022-August 2022*
• Conducted research aimed at optimizing asymmetric wireless sensor networks (WSN) of edge devices running multiple deep learning algorithms, with a goal to apply the findings to larger WSNs involving UAVs and UGVs in military settings to enhance intelligence and surveillance capabilities
• Employed OpenCV, TensorFlow, and YOLOv4, to conduct Object Detection by preprocessing and training data from the COCO dataset to run the deep learning algorithm on various Raspberry Pi and Jetson Nano models
• Analyzed system processes, latency, and contention at each node of the WSN to understand relationships between energy, accuracy, bandwidth, and other network aspects, to help determine the most optimal trade-offs for WSN optimization.

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## Projects

**Full Stack Web Based Video Game** (JavaScript, Python, HTML/CSS)
• Utilized Phaser.js and HTML for frontend game development
• Implemented user authentication and a leaderboard with Flask and SQLAlchemy
• Collaborated in a team environment using Jira and Github for documentation, task management, and version control

**AWS Login System Integrated on Android App** (Java/Python/XML)
• Integrated AWS API Gateway with Lambda and Cognito to create a login system with email confirmation and password reset for an Android application, by utilizing CognitoIdentityProvider methods

**Android Application for Realtime Location Tracking via Dead Reckoning** (Java/XML)
• Developed in Android Studios, integrated Google Maps SDK for realtime location tracking
• Dead Reckoning is implemented by updating the location marker's exact position based on GPS data every 60 seconds, and the marker is continuously updated between the 60s interval using calculations from accelerometer data

**Full Stack Text to American Sign Language Translation Web App** (React, Express, Python)
• Developed a full stack web app that takes user inputted text and concatenates corresponding American Sign Language (ASL) videos to form the translation of the input, within 24 hours in a team of four and won third place at HackUMBC Hackathon 2022
• Built an API that parsed through user input and web scraped an online ASL dictionary to download corresponding video clips, concatenated the videos, and returned the complete ASL video translation back to the front end

**Personal Website** (HTML, CSS)
• Utilized Bootstrap to develop a personal webpage
• Hosted the webpage using Firebase and Google Domains ([christina-dao.com](https://christina-dao.com))

**AVL Robot Swarm Tree** (C++)
• Generated a swarm of robot objects organized as an AVL tree by their numerical ID's and added, removed, searched, and edited robots by recursively iterating through the swarm
• Implemented trinode restructuring to ensure the swarm/AVL tree was balanced

**Stardew Valley Simulation** (C++)
• Implemented a simple, text-based version of Stardew Valley by constructing multiple classes with inheritance to a parent class with polymorphic functions

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## Skills

Object Oriented Programming | Linux | Windows, Mac, and Linux OS | Software Testing & Debugging | C++ | C | Java | JavaScript | Python | HTML | CSS | Git | DoD Secret Clearance | Jira | Jupyter Notebook | AWS | Data Structures | Search and Sorting Algorithms |