

First Last

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EDUCATION

University of North Georgia
Bachelor of Science in Computer Science

Dahlonega, GA
Jan 2020 – Dec 2023

EXPERIENCE

ACTIVE INTERIM SECRET CLEARANCE

October 2023 – Present

Data Science Intern

June 2023 – Present

Small Company Defense and Space Manufacturing

Huntsville, AL

- Developed an Optical Character Recognition (OCR) system using **Python** in a **Docker** environment that accurately identifies and isolates text regions in images and videos, resulting in efficient text extraction
- Implemented image processing techniques such as edge detection, binarization, dilation, erosion, and filtering, which enhanced the accuracy of text region identification and improved the overall performance of the OCR system
- Designed a stability check mechanism for video processing that selects consistent regions of interest across frames, ensuring reliable text recognition and significantly reducing the impact of noise and temporary artifacts in videos
- Refined the detection of text regions in the OCR system by adjusting the coordinates based on the actual content of the region, ensuring that the region tightly encompasses the text and improving the precision of text extraction

PROJECTS

Python Discord Music Bot | github.com/FirstLast/Project

May 2022 – Present

- Conceptualized and developed an interactive Discord Music Bot for over 1,000 users across 200+ servers, demonstrating proficiency in **Python** and effective development skills
- Engineered a user-friendly interface with pausing, skipping, and playlist features, and extended the Discord Python library to customize button properties
- Incorporated **asynchronous programming** techniques for rapid responses, ensuring efficient performance
- Integrated the YouTube and Spotify APIs for multi-platform playback, exemplifying adeptness in API utilization and enhancing user experience

Server-Controlled Minecraft Bots | github.com/FirstLast/Project

Jan 2023 – Present

- Developed an efficient Minecraft bot using **Java** and **Lua**, automating gameplay actions like mining and showcasing programming versatility
- Employed **WebSocket** protocol and Google Gson library for bidirectional communication and data manipulation between client and server
- Enhanced system control by dispatching JSON messages to manage bot movements and inventory, coupled with efficient algorithms to optimize bot's efficiency
- Utilized JSON data to generate a 3D visualization of surveyed blocks using JavaFX

Python Pathfinding Algorithms Visualizer | *University of North Georgia*

March 2023 – May 2023

- Developed a comprehensive Pathfinding Algorithms Visualizer using **Python**, demonstrating advanced understanding of algorithmic concepts
- Implemented various pathfinding algorithms such as A*, Dijkstra's, and Breadth-First Search, providing users with a broad range of algorithmic solutions to compare and understand
- Optimized the performance of the visualizer to ensure smooth and real-time visualization of the pathfinding process, demonstrating proficiency in performance optimization techniques

Java 2048 Game Clone | *University of North Georgia*

Oct 2022 – Dec 2023

- Collaborated with a team of three to develop a clone of the popular game 2048 using **Java**
- Implemented key game features such as the grid, tile movement, and tile merging
- Created a working leaderboard, a victory screen, and a dynamic UI that depends on phone orientation
- Developed and communicated with a team of 2 others over **GitHub** and Teams
- Successfully delivered a completed, fully functional version of the game on time and to the satisfaction of the team

TECHNICAL SKILLS

Languages: Java, Python, C#, JavaScript, TypeScript, C++, Lua, SQL, MATLAB

Technologies: Git, GitHub, Docker, Jupyter Lab, Maven, Gradle, Linux, React, Django, OpenCV, TensorFlow