NATHAN ALBE

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EDUCATION

George Mason University | Fairfax,VA   **Expected Graduation: May 2026**

B.S. in Computer Science   GPA: 3.7

Relevant Coursework: Data Structures, Algorithms, Essentials of Computer Science(HTML/CSS), Intro to Computer Programming(Python), OOP(Java),Intro to Low-Level Programming(C), Linear Algebra, Discrete Math

TECHNICAL SKILLS

Languages: Python, Java, C, Swift, HTML/CSS, Javascript(React), Node.js, SQL, NoSQL
Technologies/Frameworks: Linux, Unix, Git, JUnit, npm, Gradle, Flask, vSLAM, OpenCV, Firebase, REST

PROFESSIONAL EXPERIENCE

George Mason Department of Computer Science   **Jan 2023 - Present**

Undergraduate Teaching Assistant   Fairfax,VA

- Leading office hours for 600 students in the Introduction to Computer Programming course
- Conducted weekly review sessions on topics involving Python(fundamentals, expressions, control structures, simple data types, input/output, and unit testing) and Linux/Unix(command line, file manipulation, networking)
- Collaborated with faculty to assist comprehensive Python course materials, encompassing 5 exercises, 11 assignments, and 7 programming projects

George Mason Department of Information Sciences and Technology   **Oct 2022 - May 2023**

iOS App Development Research Assistant   Fairfax,VA

- Designed the front end of an iOS watch application using SwiftUI for emotion regulation for neurodiverse users
- Implemented Swift library HealthKit to actively track users' heart rate and offer emotion-improvement suggestions, resulting in a 90% positive user response rate
- Actively using agile development practices while communicating with the manager and team for design integration.
- Developed a responsive database for storing user information using Firebase's Realtime database

PROJECTS

AI Vision Navigation | ESN (Environmental Safety Navigation)   **Oct 2023**

AI-guided Vision Assist system   Java | Machine Learning | OpenCV | vSLAM

- Developed an AI Vision Navigation System for individuals who are visually impaired that won 1st place at the PatriotHacks Hackathon among over 100 submissions
- Using Java, OpenCV, and vSLAM technologies trained the system on data models to identify 80 different objects in under 36 hours
- Implemented a custom specialized Neural Network for gathering spatial information to alert the user of objects around them while ensuring user data privacy

Instagram Clone | Finsta   **Sep 2023**

iOS Instagram clone application   Swift | Firebase

- Developed an Instagram clone using Swift, leveraging Firebase Firestore for real-time database functionality
- Utilized Firebase Authentication for secure user authentication within the Instagram clone app
- Incorporated Firebase Storage for efficient storage and retrieval of media content using cache memory

URL Shortener | Shirnkster   **Aug 2023**

Redirecting url web application   Javascript | React | Python | Flask | Firebase

- Using React developed a web application to allow users to paste a URL and receive a shorter generated URL that is more convenient.
- Built Flask server for Firebase-mediated url redirection, transforming long URLs into shorter, accessible formats.
- Implemented Firebase Realtime database for efficient storage and retrieval of urls to and from the server