

BRUCE BLAKE

bruceblake@vt.edu | bruceblake.dev | github.com/bruceblake

Education

Virginia Tech | Blacksburg, VA

Computer Engineering | Expected Graduation: 2027

Work Experience

- **Chief Technology Officer - Technical Lead** 2023 - Present
CaughtUp - McLean, VA
 - Leading the development of a cross-platform mobile application built using **Dart** and **Flutter**

Extracurriculars and Accomplishments

- **The Diggeridoos** <https://www.diggeridoos.com> 2023 - Present
 - Member of software team competing at Elon Musk's "Not-A-Boring-Competition"
 - One of **12 selected out of nearly 400** international teams to build a machine capable of digging tunnels
 - Implemented communication system between surface Arduino and TBM (Tunnel-Boring-Machine) arduino using **CAN protocol** using **C++**
 - **Parsed data** sent from TBM and surface sensors to **GUI**
- **Leetcode Club** 2023 - Present
 - Involved in **Data Structure & Algorithm** style practice/training and mock interview sessions with peer mentors to prepare for **technical interviews** given by tech companies.
- **American Computer Science League** <https://www.acsl.org>
 - Placed **3rd** in Senior Division solving complex software problems under a time limit 2021-2022
 - Placed **1st** in Intermediate Division 2020-2021

Technical Projects

- **Top Secret (Fullstack mobile iOS application built using the SwiftUI Framework and Firebase)**
 - Organizes many aspects of friend groups such a gallery, chat, calendar, map, along with nearby events
 - Wrote and executed unit tests using **XCTest** framework for **QA** of the codebase
 - Accomplished organized codebase throughout **20K+ lines of code** using **MVVM architecture pattern**
 - Implemented personal and group chats with **built in pagination**
 - Implemented **real time** location tracking using **geolocation**
 - Used **Firebase** to store and **fetch user data** through the use of multiple **API calls**
- **Tree visualization of Fraternity Big/Little family lineage (Fullstack Web Application built using ReactJs and Neo4j)**
 - Organized brothers in fraternity in family lineages using a **tree data structure** and visualization
 - Developed a **search function** where users can get information about brothers and their family history
 - Implemented **CRUD** operations through the use of Neo4j's **Graph Database**
- **Save Nessa (Windows Application built with the Unity 3D Engine and C#)**
 - 2D arcade style shooting game where the user must keep "Nessa" safe for as long as possible
 - Implemented a **shop system** where the user can purchase various weapons
 - Implemented **weapon & powerup system** as well as an **inventory system**
- **Motion Sensor Nerf Gun (Hardware project built using Arduino components (wires, breadboards, etc) and C++)**
 - Reverse engineered a nerf gun to shoot in response to motion
 - Detected motion using **ultrasonic sensor module** connected to **Arduino microcontroller** and software written in **C++** to send signals to nerf gun.

Skills

Languages: Java | Swift | C# | C++ | Javascript | HTML | CSS | Dart

Frameworks: SwiftUI | React | Flutter

Technologies: Node.js | Figma | Firebase | Github | Unity | Processing | Arduino | Linux