

# Yonathan T. Gashu

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## EDUCATION

### Georgia Institute of Technology

Atlanta, GA

*Bachelor of Science in Computer Science - GPA 3.93/4.0*

*Graduating May 2027*

- Specializing in *Systems & Architecture* and *Devices*
- Coursework: Mobile & Ubiquitous Computing, Computer Organization & Architecture, Computer Systems & Networking, Computer Networking, Object-Oriented Programming, Data Structures & Algorithms

## EXPERIENCE

### Department of Defense (DoD)

Washington, DC

*Capabilities Development Specialist (Control Networks Section)*

May 2025 - Aug. 2025

- Employed reverse engineering techniques to examine network-enabled embedded devices and exploit firmware vulnerabilities
- Developed proof-of-concept tools enabling remote code execution
- Conducted static and dynamic analysis on the control flow of functions of interest to enhance understanding of device runtime behavior
- Authored comprehensive documentation outlining findings and usage of created capabilities

*Artificial Intelligence Research Intern*

May 2024 - Aug. 2024

- Worked alongside senior researchers on a project investigating how knowledge graphs (KGs) can be extracted from unstructured text
- Implemented a KG-RAG system to enable Knowledge Graph Question Answering (KGQA)
- Developed methodologies for Named Entity Recognition (NER) and Relationship Extraction (RE) to populate the KGs
- Wrote *Python* scripts using *pandas* & *numpy* for efficient processing of data from PDF to KG format

*Software Engineer Intern*

Sep. 2022 - Aug. 2023

- Member of the government development team in the Data Targeting Solutions division. This team is essential for the creation of enterprise applications in support of targeting using Cloud Native techniques
- Utilized *Java* to develop backend database management features for internal web application, and successfully integrated those functionalities into the frontend interface using *VueJS*
- Created a developer-sided API to allow for more efficient creation of test agreements/datafeeds

### The Hive Makerspace

Aug. 2025 - Present

*Student Researcher*

Atlanta, GA

- Led ECE makerspace operations on the electronics lab and embedded devices attracting over 7500 monthly visitors
- Delivered training sessions on embedded systems and benchtop tools for 200+ students/semester, ensuring 100% proficiency

### Autonomous & Connected Driving Simulator VIP

Aug. 2024 - May 2025

*Cybersecurity Subteam (Undergraduate Research)*

Atlanta, GA

- Engineered multimodal biometric data pipelines (*EEG*, *ECG*, *eye tracking*) in *Python*/*Matlab* for preprocessing and visualization of driver states, supporting cybersecurity-focused experiments on drivers during simulated attacks
- Extended *Unity* driving simulation by integrating warning systems and threat event triggers to simulate cyberattacks

## PROJECTS

### Rust-PWN | *Rust*

Aug. 2025 - Present

- Building a exploit tooling library in *Rust* for binary exploitation and reverse engineering challenges

### Raycaster | *C++*, *SDL2*

Aug. 2024 - Dec. 2024

- Built a Wolfenstein-style 3D raycasting engine from scratch in *C++* using *SDL2*, handling rendering pipeline, collision detection, 2D/3D graphics math, map and texture parsing, skybox generation, and ray traversal optimization

## TECHNICAL SKILLS

**Languages:** C, Java, C++, Python, C#, Assembly (ARM64), JavaScript

**Frameworks:** React, Node.js, VueJS, JUnit

**Developer Tools:** Ghidra (Firmware Analysis, Reverse Engineering), Atlassian tools (Bitbucket, Confluence, Jira), Linux, Git, VMware, Wireshark, Docker, Amazon Web Services, Google Cloud Platform, VS Code, IntelliJ, Jenkins, Agile, Unity