

Yousif Nazhat

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EDUCATION

Rutgers University

Major: Information Technology & Informatics; Minor: Critical Intelligence

New Brunswick, NJ

Expected Graduation: Jan. 2027

- **Relevant Coursework:** Data Structures, Computer Architecture, Discrete Structures, Linear Algebra

PROFESSIONAL EXPERIENCE

RU Airborne, Avionics & Integration

Design Team Lead

New Brunswick, NJ

Jan. 2025 – Present

- Directed avionics integration for a high-performance UAV **sponsored by NASA and Lockheed Martin**, ensuring **100% compliance** with strict industry safety and reliability standards.
- Authored a **detailed design report** documenting testing methodology, data analysis, and findings related to propulsion performance and safety improvements.
- Led cross-functional system integration as measured by the **successful assembly of the "Daedalus" aircraft** within a strict **5-week prototyping window**, by coordinating technical workflows between Aerodynamics and Manufacturing sub-teams.
- Optimized aircraft propulsion efficiency, achieving a **1.46 Thrust-to-Weight ratio** and projected **80 m/s cruise speed**, by modeling motor-propeller combinations in eCalc.
- Enhanced system reliability as measured by **zero critical failures** during **130A peak-current operations**, by implementing rigorous pre-flight safety checklists.

LEADERSHIP & INVOLVEMENT

Phi Mu Delta Fraternity

Alumni Relations Chair

New Brunswick, NJ

Jan. 2024 – Present

- Surpassed fundraising targets by **625%**, raising over **\$5,000** for the Embrace Kids Foundation, and securing sponsorships from **32 local organizations**.

Organizations

- **Phi Mu Delta Fraternity** - Alumni Chair
- **RU Airborne** - Avionics & Integration Design Team - Team Lead
- **RU Cybersecurity Club** - Team Lead

Sep. 2025 – Present

Jan. 2025 – Present

Sep. 2025 – Present

PROJECTS

Virtual Honeypot Security Monitoring Lab | *VirtualBox, Cowrie, ELK Stack*

- Simulated **credential-based intrusion attempts** by deploying a virtual honeypot environment that detected and logged **Nmap reconnaissance and Hydra brute-force activity**.
- Captured **1,000+** authentication attempts and produced **actionable security analytics dashboards** to demonstrate threat-detection capabilities.

RISC-V ISA Subset Implementation | *C, Assembly*

- Achieved **100% execution fidelity** for the RISC-V ISA subset, measured by **passing all unit tests** for memory and arithmetic operations.
- Developed a **cycle-accurate 5-stage instruction pipeline** (Fetch, Decode, Execute, Memory, Writeback) and set-associative cache simulator.

Network Diagnostics & Security Analysis | *Python, Wireshark, Nmap*

- Analyzed DNS behavior and network traffic using **Wireshark** and **Nmap**, identifying vulnerabilities via **TCP/IP and OSI model analysis**.

Symbiote Host Compatibility Tree | *Java*

- Designed a **binary search tree** modeling compatibility operations for a biological data simulation.

Election Data Analysis Tool | *Java*

- Optimized **hierarchical data query efficiency** for thousands of records by architecting a **custom triply-nested linked list structure**.
- Parsed and aggregated CSV datasets **without external database libraries** for high-performance data retrieval.

128-bit Arithmetic Toolkit | *C*

- Enabled **high-precision cryptography-grade computation**, exceeding standard 64-bit hardware limits by **2x**.
- Engineered low-level bitwise algorithms (**shifting/masking**) to manipulate raw memory and custom structs.

Filesystem Emulator | *C*

- Created a **memory-based file system** supporting basic directory and file operations to simulate **OS-level storage management**.

TECHNICAL SKILLS

Languages & Tools: Java, C, Python, RISC-V Assembly, HTML/CSS, Wireshark, Nmap, GDB, Git, Linux/Unix, eCalc, Microsoft Office Suite