

Jacob Kirk

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Education

University of Central Florida

Expected 2027

Bachelor of Science in Computer Science, Minor in Math

Orlando, FL

- **Relevant Coursework:** Computer Science II (C/DSA), Computer Organization and Logic (Assembly/Logic Design), Cyber Defense Analysis (TestOut CyberDefense Pro), Systems Software (Compilers), Artificial Intelligence (ML Algorithms), Enterprise Computing (Distributed Applications)
- **Organizations:** Delta Tau Delta Fraternity, Hack@UCF

Seminole State College

2022-2023

Dual Enrolled in Computer Programming and Analysis

Sanford, FL

Projects

NetTrace – Real-Time Network Intelligence Tool | *Personal Project*

- Developed a **real-time traceroute analyzer** (Flask + Scapy + SSE) performing TCP/ICMP/UDP probing, RTT measurement, and hop enumeration.
- Integrated **reverse DNS, geolocation, WHOIS/ASN, ISP attribution, and device/role classification** to profile each hop.
- Built an interactive Leaflet UI that **maps each hop globally**, visualizes paths, and displays live metadata for security analysis and network exposure assessment.

PL/O Compiler & Virtual Machine | *Academic Project*

- Created a **compiler and VM environment** in C that mimics low-level program execution, allowing analysis of program memory layout and control-flow.
- Implemented a recursive-descent parser, symbol table, and stack-based VM to understand **buffer behavior, frame pointers, and call-stack execution**.
- Strengthened ability to spot **potential miscompilation, memory misuse, and undefined-behavior vulnerabilities**.

Face Recognition with PCA & CRC | *Academic Project*

- Implemented **PCA** for dimensionality reduction and analyzed how data compression impacts **model robustness and adversarial sensitivity**.
- Used **CRC classification** to evaluate accuracy, error rates, and reliability under varied feature extraction pipelines.

Breast Cancer Classifier (Logistic Regression) | *Academic Project*

- Built a **logistic regression model** with L2 regularization, reinforcing understanding of **model explainability, bias, and reliability**.
- Performed validation and testing with security-minded rigor, including **input sanitization, dataset integrity checks, and metric-based evaluation**.

Work Experience

Facilities / Maintenance Engineer

May 2023 - Current

Dillard's, Inc. (Part-Time)

Orlando, FL

- Troubleshoot and repair store facilities (HVAC, lighting, plumbing, displays) to ensure safe operations.
- Developed strong problem-solving and hands-on technical skills under time constraints.
- Collaborate with store management to minimize downtime and improve efficiency.

Construction & Maintenance Assistant

2023 - Current

ARS Construction & Maintenance Co, Inc. (Part-Time)

Longwood, FL

- Supported commercial construction/repair projects at Amazon distribution centers, Nike, and retail clients.
- Assisted in electrical, carpentry, and general maintenance tasks in high-demand environments
- Learned adaptability and teamwork in large-scale, contract-based projects whilst adhering to budgets.

Technical Skills

Languages: C, C++, Python, Java, Bash, JavaScript

Tools: Linux, Git/GitHub, Flask, Scapy, Wireshark, VS Code

Technical Areas: Systems Programming, Networking, Operating Systems, Data Structures

Security Skills: Network Analysis, Log Review, Vulnerability Concepts (TestOut CyberDefense Pro)