

# Jair Ramirez

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## EDUCATION & CERTIFICATIONS

### Bachelor of Science in Computer Science (Minor: Mathematics)

August 2025

Texas State University

San Marcos, TX

**Relevant Coursework** - ○ Data Structures & Algorithms ○ Object Oriented Programming ○ Database Systems ○ Technical Writing  
○ Computer Architecture ○ Data Mining ○ Computer System Security ○ Computer System Fundamentals ○ Machine Learning

### Certifications:

- Security+ Certification (CompTIA)
- Certified Defensive Security Analyst (Hack The Box)

In Progress

In Progress

## PROFESSIONAL EXPERIENCE

### Software Engineer - AI Consultant

April 2024 - Present

Outlier AI

Remote

- Accomplished **alignment of AI model outputs** with user expectations by evaluating results based on specific user criteria.
- Enhanced **AI model performance** by developing ideal responses that served as benchmarks for training data, aligning model behavior with user prompts.
- Documented real-time troubleshooting processes** to create comprehensive records of complex AI model challenges, resulting in optimized training data.
- Improved **development efficiency** by swiftly troubleshooting and resolving AI model issues.

## PROJECTS

### VM SandBox Project | VirtualBox, pfsense, Ubuntu, Kali Linux, Win XP, Win 95, Wireshark |

November 2024

- Collaboratively designed and implemented** a multi-layered virtual network using VirtualBox and pfSense to create segmented subnets (Ubuntu, Windows XP, Kali, Windows 95). **Configured** intricate firewall rules and access control policies.
- Implemented **penetration testing techniques** (e.g., MS08-067, MS17-010, and phishing) to demonstrate real-world vulnerabilities, while analyzing traffic with Wireshark for troubleshooting.
- Overcame technical challenges as a team, reinforcing **problem-solving skills** and robust security practices across both technical and human domains, and maintained **comprehensive documentation** of system configs and attack methods throughout the project.

### Multi-Server Security Monitoring Lab | Dell PowerEdge 1950 & 2950, Security Onion, Debian |

Feb. 2025

- Deployed a multi-server SIEM lab using Security Onion on a Dell PowerEdge 1950 and a Debian-based log collector on a PowerEdge 2950 for centralized security monitoring.
- Configuring** intrusion detection and real-time log analysis with Zeek, Suricata, and Elastic Stack to detect and respond to security threats.
- Developing security event correlation rules and automated alerting to **detect unauthorized access** and network anomalies.

### Machine Learning IDS Project | Python, Pandas, scikit-learn, TensorFlow, Matplotlib, Seaborn |

April 2024 - Present

- Designed and implemented a machine-learning-based network Intrusion Detection System by **aggregating** eight ISCX 2012-derived CSVs (78 flow features) with Pandas, removing ~9.6% duplicate rows, handling edge cases ( $\infty \rightarrow \text{NaN}$ ), and standardizing features to zero mean/unit variance.
- Trained and **evaluated three classifiers**, Random Forest (78% accuracy, macro F1 0.58), balanced SVM on a 30 K sample (prioritized WebAttacks recall 75%), and a DNN in TensorFlow/Keras (78% accuracy, weighted F1 0.73), **analyzing trade-offs** between overall accuracy and minority-class detection.

### Home Networking Lab | Cisco Routers & Switches, VLANs, Routing Protocols, PuTTY |

Jan. 2025

- Building a home lab with Cisco 1841 and 2801 routers and Catalyst 3550 and 2960 switches to develop practical **networking skills**, including **configuring** VLANs, inter-VLAN routing, and trunking to manage traffic across devices.
- Exploring port security and dynamic routing protocols for **secure** and scalable networking, while gaining **hands-on experience** with device configuration via CLI tools like PuTTY.
- Using Wireshark to analyze network behavior, troubleshoot issues, and optimize performance in a secure and segmented environment.

## TECHNICAL SKILLS

**Programming Languages** - ○ Python ○ Java ○ C++ ○ C ○ Bash/Shell Scripting ○ SQL ○ MIPS32

**Software** - ○ Splunk ○ Security Onion ○ Wireshark ○ Linux ○ Windows OS ○ AWS EC2 ○ VisualStudio Code ○ GitHub ○ PuTTY  
○ Kali Linux ○ Ubuntu Linux ○ Debian ○ Pfsense ○ Oracle VM ○ MySQL ○ Excel

**Networking** - ○ Network Protocols (e.g., TCP/IP, UDP, HTTP, DNS, DHCP) ○ Routing & Switching ○ Firewall Configuration  
○ Network Analysis & Troubleshooting ○ VLAN Management ○ Subnetting

**Security** - ○ Security Monitoring & Threat Detection ○ Incident Response Frameworks (NIST, CIS) ○ Penetration Testing  
○ Log Analysis & SIEM ○ Intrusion Detection & Prevention ○ OWASP Top 10