# **Consuelo Ramirez**

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### SUMMARY

Detail-oriented and mission-driven cybersecurity graduate with hands-on experience at Department of Energy labs. Skilled in vulnerability assessment, secure software development, and Red Team practices. Demonstrated ability to build and optimize secure systems in compliance-driven environments. U.S. citizen with active Secret clearance, eligible for Public Trust/TS roles, and passionate about securing federal systems through secure-by-design solutions.

## **EDUCATION**

May. 2025 The University of Texas at El Paso Master of Science in Software Engineering with a concentration in Secure Cyber-Systems The University of Texas at El Paso Dec. 2023 Bachelor of Science in Computer Science, minor in Mathematics **Honors & Affiliations** Dean's List (Fall 2019), Spring (2022), TRAX International Endowed Scholarship 2020-2021, Secret-level Clearance (2022-present), Scholarship for Service (SFS) (present)

## **TECHNICAL SKILLS**

- Programming & Scripting: Python, Bash, Java, C/C++, JavaScript, SQL
- Cybersecurity Tools & Frameworks: Kali Linux, Wireshark, Nmap, Suricata, Nessus, Ghidra, IDA Pro, Volatility, Binwalk, Steghide, Burp Suite
- Secure Development & DevOps: Git, GitHub, GitLab, Docker, Flask, pytest, microservice testing, CI/CD pipelines
- System Security & Analysis: Vulnerability scanning, network monitoring, reverse engineering, digital forensics, authentication systems
- Machine Learning & NLP: TensorFlow, Keras, BERT, OpenAI API, cyber data analysis, automation
- Operating Systems: Unix/Linux (Kali, Ubuntu), Windows, Virtual Machines
- Data Visualization: Power BI, Plotly, Excel
- Web & UI Tools: HTML, CSS, Unity, Bootstrap
- Other Skills: Fluent in English and Spanish, AV systems (Extron, Q-SYS), STEM outreach, cybersecurity education experience

## CYBERSECURITY EXPERIENCE

## Lawrence Livermore National Security

Cybersecurity - Graduate Intern - Cyber and Critical Infrastructure Summer Institute

- Developed a Python library composed of pydantic module files as a centralized repository to reduce dependencies across projects.
- Created scripts to compare/modify/update imports, automatically manage dependencies, and resolve conflicts.
- Set up a GitLab CI/CD pipeline to automate nightly updates, including running tests and generating detailed reports on changes made to repositories.

#### Department of Energy Omni Technology Alliance/Pacific Northwest National Laboratory Richland, WA | May.2024 - Aug. 2023 Visiting Researcher Intern

- Designed and developed an immersive educational game utilizing Unity, to demonstrate cybersecurity threats in hydropower systems, effectively translating complex technical concepts for a broad audience and enhancing awareness within the energy sector.
- Conducted research on IoT devices and their communication protocols, contributing insights to the evolving landscape of IoT technologies. White Sands Missile Range, NM | Summer 2021

#### **Army Futures Command Devcom DAC**

Cybersecurity Intern

- Authored training guides for Nessus, Ettercap, SSH, Ngrok, and Nmap, reducing intern onboarding time by 50%; adopted as standard materials for new analysts.
- Researched Wi-Fi exploitation tools (e.g., Wifite), 5G vulnerabilities, AI algorithms, and database structures to support cyber capability development.
- Created a Professional Development Event (PDE) enabling hands-on cybersecurity training with tools such as Ettercap, File Transfer Protocol, Virtual Environments, and Wireshark.
- Presented technical workshop on Linux terminal commands, demonstrating practical cybersecurity applications for team-wide adoption.

## **RESEARCH & PROJECTS**

#### **CWE-ATT&CK Analyzer**

- Processed large datasets (CWE and ATT&CK) using Python to create embeddings and store vectors in a Weaviate database for querying.
- Used the OpenAI API to summarize outputs from BERT embeddings for simpler and more concise query results.
- Created visualizations with Plotly to display attack techniques, weaknesses, and mitigations.
- Web Proxy Server Implementation (Computer Networks Proxy Server Lab)
- Designed and implemented a Python-based socket program to create a simple HTTP web proxy server. The project focused on understanding how proxy servers intercept, modify, and forward HTTP requests between clients and servers.

## **Reliable File Transfer Protocol (Computer Networks)**

• Created a system that simulated the operation of application layer protocols for reliable file transfers. Implemented error recovery and packet acknowledgment to guarantee successful delivery.

Livermore, CA | May.2024 - Aug. 2024

#### Web-Based Authentication System

- Developed a PHP-based authentication system with password validation, user sessions, and role-based access (admin vs. user).
- Implemented access control, admin privilege escalation, and secure redirection to prevent URL tampering.

#### **Image Classification Using CNNs**

• Trained a CNN using TensorFlow and Keras to classify similar images. I Improved accuracy with regularization, batch normalization, and data augmentation. Compared results against logistic regression using accuracy and precision metrics.

## **ADDITIONAL EXPERIENCE**

#### University of Texas at El Paso.

Teaching Assistant

- Assisted in teaching the Software Engineering capstone course in the undergraduate computer science degree.
- Supported course instructor in lecture preparation and delivery.
- Clarified complex concepts for over 100 students during lectures, held office hours, and provided feedback on project deliverables.
- Served as the interface between student teams and clients, ensuring clear and efficient communications.

## **UTEP Learning Environments**

- Student Leadership Advisor (SLA)
- Oversaw 30+ student employees and facilitated communication with faculty mentors to ensure smooth collaboration and clear expectations.
- Managed and allocated campus-wide tech support requests, resolving classroom technology issues efficiently.
- Mentored and trained staff on audio-visual systems, troubleshooting, workshop facilitation, and use of fabrication equipment.
- **Test Research Management Center Broadleaf** White Sands Missile Range, NM | Jun.2022 – Aug. 2022 STEM Intern
- Developed a user-guided interface utilizing Power BI, Power Apps, and Excel to effectively present mission support resource data, enhancing accessibility and user experience.
- Created 3D airspace model, resulting in a 25% improvement in airspace deconfliction. This model enhanced visualization and decision-making processes. El Paso, TX | Aug. 2018 - Aug. 2021

## **UTEP Learning Environments**

Undergraduate Assistant

- Instructed K-12 students in various STEM subjects, including Python, Scratch, Raspberry Pi, and Sphero, as part of the Tech-E outreach program.
- Installed, configured, and programmed audio-visual equipment such as Extron and Q-SYS for classrooms.
- Administered the online 3D printing queue using 3D printer OS, overseeing printouts for multiple 3D printers with proficiency in Tinker CAD.
- Assisted students with their DIY and class projects in the GAIA makerspace with available fabrication tools
- Gains in the Education of Mathematics and Science (GEMS) White Sands Missile Range, NM | Summer 2019 & 2021 **Program Mentor**
- Provided mentorship to middle school students, facilitating hands-on experiments in electronic warfare and social engineering, fostering practical skills and critical thinking.
- Collaborated with teachers and Army research scientists to effectively coordinate daily activities and provide support to students.

## **PROJECTS & LEADERSHIP EXPERIENCE** (You can use this section to detail class or independent technical

## projects alongside any extracurriculars)

#### Great Minds in Stem (GMIS)

• Participated in cybersecurity hackathon which covered topics such as reverse engineering, steganography, cryptography, and the utilization of tools such as Wireshark, IDA Pro, and Ghidra.

#### **CyberForce Competition**

 Attended a collegiate, team-based competition centered around a defend/attack energy cyber scenario, emphasizing the critical infrastructure's cybersecurity hardening. Engaged in tasks involving steganography and PCAP file analysis to strengthen overall team performance.

#### **Tracer FIRE Competition**

- Participated in a digital forensics' hackathon, utilizing tools like Ghidra, IDA, and Suricata within virtual machine environments. Crafted detailed reports outlining the strategies employed to uncover solutions during the cyber-attack investigations in the competition. Apr. 2024 & Apr.2025 Kernelcon CTF
- Competed in Capture-the-Flag events, participated in side-quests, badge hardware hacking, and hands-on challenges testing offensive and defensive skills across multiple domains.

## Leadership & Outreach

- Miners in Cybersecurity: Delivered a workshop reinforcing networking fundamentals and explaining core concepts of network systems, including protocols and their functions, to support students pursuing the Google Cybersecurity Certificate.
- Google Development Student Club: Officer of External Affairs- Designed and implemented outreach activities to increase membership and involvement. Managed RSVPs for events, securing 50+ attendees for workshops.
- Bandit (game development organization): Member of the web development and technical team, required the use of PHP, HTML, Bootstrap and CSS, as well as designing with Unity.
- Computing Alliance of Hispanic-Serving Institutions: Received mentorship as a protégé and became a mentor to peers as an Ally. Attended personal development workshops and held monthly 1-1 meetings with protégés to assist in their academia.

## Certifications

Oct. 2023 & Oct.24

Nov. 2023

Nov. 2022

El Paso, TX | Aug. 2021 - Aug.2023

El Paso, TX | Jan.2024 - May 2025