Charles Peyton Wiecking

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Education

Virginia Polytechnic Institute and State University (Virginia Tech) **Expected:** August 2025
M. Eng. Computer Science and Applications | ***GPA**: 3.96/4.0* *Blacksburg, VA*

- **Courses**: Information Security, Network Architecture & Protocols (I & II), Network Security, AI Tools for Software Engineering, Algorithms in Bioinformatics, Advanced Linux Kernel Programming, Social Media Analytics
- **Honors**: Virginia Tech Talent Scholarship, ODK National Leadership Honor Society

Virginia Military Institute May 2023
B.S. Computer Science, Cybersecurity minor | ***GPA**: 3.48/4.0* *Lexington, VA*

- **Courses**: Operating Systems, Computer & Information Security, Networking, Design & Analysis of Algorithms, Data Structures, Database Management Systems, Open Source Intelligence, Human-Computer Interaction, Data Analytics
- **Honors**: Graduate with Distinction, Academic Stars (Distinguished in Academic Merit), Dean's List

Experience

Computer Scientist (GS-1550-09) August 2024 – Present
U.S. Air Force Cryptologic and Cyber Systems Division: Engineering Branch *Blacksburg, VA (Remote)*

- Performing limited duties while attending graduate school full time

Computer Scientist (GS-1550-07) January 2024 – August 2024
U.S. Air Force Information Assurance Technical Assistance Center *JBSA-Lackland AFB, TX*

- Conducted +50 interoperability and performance tests on various High Assurance Internet Protocol Encryptors (HAIPEs) in support of the U.S. Air Force's and National Security Agency's missions
- Maintained and modified two network testbeds comprised of HAIPEs, Ethernet and KVM switches, firewalls, and network testing apparatuses for the purpose of testing & upgrading HAPIEs and associated remote managers
- Developed an SNMP GUI Python application capable of displaying COMSEC keys, radio calibration data, audit logs, and executing self tests on the ARC-210 radio effectively preventing pre-test and operational ambiguity
- Modified a Java application to run self tests and translate hexadecimal transmit inputs and received outputs in a clear, concise manner on a JFrame GUI for the APX-119 Identification Friend or Foe (IFF) transponder
- Supported electronics and test engineers with various projects including Mobile User Objective System (MUOS) testing, cryptographic modernization testing, and IDE setup for C/C++, C#, Java, and Python

Computer Scientist (GS-1550-07) July 2023 – January 2024
U.S. Air Force Cryptologic and Cyber Systems Division: Engineering Branch *San Antonio, TX*

- Developed the Actions Database and Personnel Tracking Tool (ADAPTT) using PowerApps and SharePoint, reducing the average Request for Personal Action and civilian hiring process approval timeline by several days
- Authored a comprehensive user and operations guide for ADAPTT, effectively streamlining training for HNC Branch Chiefs (GG-14/15), Field Grade Officers (O5/O6), and Human Resources
- Enhanced the ADAPTT development wiki by adding over 10+ new sections and thoroughly commented multiple pages of code, improving documentation quality for future development and maintenance
- Implemented, enforced, and documented role-based access controls both within the U.S. Air Force environment and ADAPTT to ensure system security and data integrity
- Conducted and documented bi-weekly system and acceptance tests, maintaining 99% app uptime and ensuring consistent performance and reliability

Summer Intern May 2022 – July 2022
Department of Defense Cyber Defense Laboratory at Virginia Military Institute *Lexington, VA*

- Developed +6 pieces of documentation, curriculum and policies concerning the use of lab-owned hardware and software including the Hak5 Bash Bunny, USB Rubber Ducky, and Think Pads
- Conducted research on emerging cyber security trends, tools, and techniques to stay up to date with the evolving threat landscape and presented the research in the Fall semester to Computer Science faculty and students
- Briefed approx. 50 middle/high school aged students concerning cyberstalking on social media and led interactive activities to demonstrate how to identify fake social media accounts and set up appropriate privacy settings
- Assembled and imaged +15 Dell OptiPlex All-In-One desktop computers under the supervision of the Computer Science Department's IT manager to learn about IT operations and functions
- Tutored and mentored summer session students in the subject of basic Java programming on an as-needed basis

Technical Skills

Languages: Python, Java, PowerFX (Professional); C/C++, Rust, SQL, LaTeX (Academic)
IDEs & Tools: Visual Studio Code, PyCharm, GitHub, MySQL Workbench, PowerApps, Jira, Overleaf
Networking & Security: Wireshark, Cisco IOS, Routers, Switches, Firewalls, HAIPEs, OSINT Tools
Operating Systems & Virtualization: Windows, Linux (Kali, Debian & Ubuntu), VMware, VirtualBox
Collaboration & Automation: Microsoft Power Automate, SharePoint, Google Suite

Certifications

Security+ | CompTIA
Certified in Open-Source Intelligence (C|OSINT) | McAfee Institute
DAWIA Engineering & Technical Management Foundational | Defense Acquisition University
Emergency Medical Technician | National Registry of Emergency Medical Technicians

Research and Projects

Ducky | *AI Tools for Software Engineering Term Project (CS 5914)* September 2024 – December 2024

- Developed *Ducky*, a Streamlit-based AI assistant integrating LLMs to provide code review, debugging, and contextual insights, with *The Pragmatic Programmer* as a reference for evidence-backed responses
- Engineered multi-agent capabilities for dynamic task handling, including generating Python algorithms, modifying code, and enabling mixed-context conversations
- Incorporated advanced features such as semantic search with embedding caching, voice-to-text commands, and AI-powered image generation for a versatile user experience
- Designed an intuitive interface with collapsible evidence sections and robust error handling, optimizing for maintainability and seamless interaction

Square Vision | *Undergraduate Capstone (CIS 480/490)* September 2022 – May 2023

- Developed a real-time object recognition application for Windows OS and Microsoft HoloLens 2 using OpenCV and YOLO libraries with Python, C/C++, and C#
- Explored augmented reality applications by integrating object recognition capabilities into Microsoft HoloLens 2, demonstrating cross-platform potential for diverse industries
- Led a team of three peers, managing sprint timelines in Jira, maintaining documentation in Overleaf, and presenting bi-weekly progress updates
- Designed a Tkinter-based GUI, prioritizing accessibility and ease of use, and conducted usability testing with feedback based on NASA-TLX and SUS scales

AI/ML Student Researcher | *DoD Cyber Defense Lab at VMI* September 2022 – May 2023

- Developed learning models using regression and K-Means methods for provided datasets for the purposes of exploring potential AI/ML applications in cyber security and to increase personal knowledge on the subject
- Assisted undergraduate researchers with creating a Convolutional Neural Network (CNN) model for identifying weapons in images and short videos, optimizing for real-time detection accuracy
- Conducted monthly research and reporting on current AI/ML issues, developments, and ethics, authoring detailed reports and presentations

OSINT Student Researcher | *DoD Cyber Defense Lab at VMI* February 2022 – May 2022

- Conducted a comprehensive research project to determine how OSINT techniques can be effectively utilized to prevent cyberstalking, identifying key strategies and tools
- Developed competence in conducting safe and ethical OSINT investigations, adhering to legal and ethical standards while gathering and analyzing publicly available information
- Created detailed reports and documentation of research findings, outlining methodologies, results, and recommendations for implementing OSINT techniques in cyberstalking prevention

Leadership

U.S. Air Force Reserve Officer Training Corps August 2020 – May 2023
AFROTC Detachment 880 *Lexington, VA*

- Mentored and instructed approximately 150 cadets seeking commissions or employment with the U.S. Air Force and U.S. Space Force, fostering leadership and professional development
- Selected by cadre to serve as Detachment Safety Officer (C/1st Lt) from January 2023 to May 2023, responsible for overseeing safety protocols and ensuring compliance with U.S. Air Force safety standards
- Developed key competencies for success as a Civil Servant within the Department of the U.S. Air Force, including a comprehensive understanding of U.S. Air Force rank structures, performance evaluations, and mission statements