JACK BENNING

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Security-focused software engineer with a bachelor's degree in computer engineering specializing in networking & cybersecurity and software systems from Virginia Tech. Experienced in application security testing, reverse engineering, and secure software development across defense and enterprise environments. Background includes vulnerability research, API security assessment, and building security tooling. CAPM certified with strong foundations in Agile methodologies. Currently pursuing an M.S. in Computer Science at Georgia Tech with a focus on artificial intelligence.

EXPERIENCE

Web Developer | May 2025 – Present
Crimson Phoenix | *Chantilly, VA*

- Develop secure, enterprise-grade web applications with emphasis on security best practices
- Backend development in C# and .NET with secure coding standards
- Implement and integrate modern JavaScript libraries with security considerations

Software Reverse Engineer | July 2024 – May 2025
QinetiQ US & Booz Allen Hamilton | *Charlottesville, VA*

- Perform embedded software and firmware code assembly, disassembly, and reverse engineering
- Utilize software debuggers and diagnostic tools for vulnerability analysis
- Analysis of Software Defined Radios (SDRs) for security assessment
- Programming with FPGAs
- Expand capability through software development practices

Software Engineer | May 2022 – July 2024
Northrop Grumman | *Annapolis Junction, MD*

- Facilitate testing of superconducting & quantum devices by performing CI/CD & Agile software development in Python & C++
- Lead 2 teams as Scrum-lead ~ leads daily meetings, sprint planning, & maintaining Jira board
- Analyze cross-discipline users' needs to determine software requirements within feasibility constraints
- Rigorous testing of software to ensure reliability for stakeholders

Undergraduate Researcher | August 2022 – December 2022
Virginia Tech | *Blacksburg, VA*

- Design embedded systems to collect data about farm animals & wirelessly transmit to hosts
- Develop an ML model to maximize battery life & detect trends in data
- Test ML models & embedded systems for real-world applications

EDUCATION

Georgia Tech, Virtual | M.S. in Computer Science | January 2026 – Present

- Primary focus in Artificial Intelligence

Virginia Tech, Blacksburg, VA | B.S. in Computer Engineering | May 2023

- Graduated Cum Laude, GPA: 3.51
- Primary focus in Networking & Cybersecurity, secondary focus in Software Systems

CERTIFICATIONS

Certified Associate Project Management Professional (CAPM) | Project Management Institute

- Equipped with essential skills in project management, including agile methodologies and business analysis

AWS Certified Cloud Practitioner | Amazon Web Services (AWS)

- Foundational knowledge and skills in AWS cloud computing, essential AWS services, best practices, and cloud computing concepts

SKILLS

Security & Analysis: Application Security (AppSec), OWASP API Security Top 10, OWASP Top 10, REST API Security Testing, Authorization Testing, Broken Object Level Authorization (BOLA), Broken Authentication, Dynamic Analysis (DAST), Access Control Validation, Burp Suite, Ghidra, Reverse Engineering, Binary Analysis, Vulnerability Research, Kali Linux Tool Suite, Network Security

Programming Languages: Python, C, C++, C#/.NET, JavaScript/TypeScript, Ruby, MATLAB, Verilog, Shell Scripting (sh, bash)

Assembly & Low-Level: MIPS, ARM, x86, PowerPC Assembly, Embedded Software Development, FPGA Programming, BLE Programming

Web & API Development: REST API Development, React, Node.js, Express.js, Ruby on Rails, Knockout.js, Enterprise Web Application Development, OpenAPI 3.x

Frameworks & Libraries: pytest, Chart.js, PyTorch, NumPy, Pandas/Polars, Plotly, Dash, QT/PyQT, MDB Bootstrap, Pydantic, FreeRTOS

DevOps & Infrastructure: Docker, Kubernetes, Vagrant, CI/CD Software Development, GitLab Automation, Apache Web Servers, AWS Services, Git

Databases & Messaging: MongoDB, PostgreSQL, MySQL, RabbitMQ

Methodologies & Tools: Agile Methodologies, Sprint Planning, Jira Administration, Scrum Leadership, Software Defined Radio Technology

SECURITY PROJECTS

endpwnt | Personal

- Built an auth-aware REST API security scanner that ingests OpenAPI 3.x specifications and probes endpoints across multiple identity contexts to surface authorization and authentication vulnerabilities
- Designed to catch bugs that static analyzers miss by dynamically comparing server behavior across privilege levels – unauthenticated, user, and admin
- Generates a self-contained HTML dashboard mapping findings to the OWASP API Security Top 10, with CI/CD integration via severity-based exit codes

Open-Source Chat App Security Assessment | Personal

- Performed manual security assessment of an open-source chat application focused on authorization and session management
- Verified private conversation access controls and identified a logout/session revocation weakness where a previously issued token could still refresh authentication after logout

Offline OT Software Asset Extractor | FoxGuard Solutions

- Created an offline software asset extractor API in C++ for OT devices used in vital infrastructure to maintain device security and performance

ADDITIONAL PROJECTS

AWG Sequencer | Northrop Grumman (Scrum Team Lead)

- Support testing of superconducting & quantum computing devices at cryogenic temperatures by designing a waveform compiler in Python to convert high-level commands into an Arbitrary-Waveform-Generator file

Control-plane | Northrop Grumman (Scrum Team Lead)

- Create a control-plane environment in Python to facilitate testing of superconducting & quantum computing devices

Online Forum | Personal

- Developed & deployed a Ruby-on-Rails app to an AWS EC2 instance with secure user authentication (encrypted credentials) and posting functionality

AI Campaign | Northrop Grumman

- Developed & trained artificial-intelligence agents using AWS Sagemaker to simulate fighter jet dogfighting

Smart "Pig" Sensors | Virginia Tech

- Designed and tested low-power C/C++ BLE code on an embedded TI board to create a mesh network of clients transmitting sensor data through an ML model for activity analysis

SpO2 Sensor | Virginia Tech

- Interfaced a blood-oxygen finger sensor with an Arduino using analog signal filtration & wrote software to obtain accurate SpO2 & heart-rate measurements

Twitter Scraper | Virginia Tech

- Created a Twitter scraper for answering tweets using Wolfram Alpha API & sent results to a containerized text-to-speech app via RabbitMQ

Embedded RTOS Scheduler | Virginia Tech

- Built a variety of scheduling algorithms from the ground up in C++ for use on an Arduino by modifying the FreeRTOS library

Lisp Interpreter | Virginia Tech

- Created a Linux & Windows cross-compiled Lisp programming language interpreter in C++ and QT