Durnea Maxim

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Education

Politehnica University of Bucharest, B.S. Computer Engineering 2023 – 2027
Coursework: Data Structures & Algorithms, Operating Systems, Computer Networks, Communication Protocols, Object-Oriented Programming, Digital Electronics, Assembly Language, Introduction In Cybersecurity, Local Networks, Parallel and Distributed Algorithms, Computer Graphics
Additional: Security Summer School (2025) – OWASP Top 10, Web Application Security, Vulnerability Exploitation; CTF First Place (30 teams)

Projects

ByteBucket File Storage Backend *(Go, PostgreSQL, AWS S3, JWT)*
Developed a file storage backend with user authentication, bcrypt password hashing, JWT access and refresh tokens, and database-backed session management. Implemented presigned S3 URLs for direct client-to-cloud uploads. Built CI/CD pipeline with GitHub Actions and used SQLC for type-safe database queries.

Carbon Farming Platform *(Go, Python, React, PostgreSQL, Copernicus API)*
Collaborated in 4-person team to build satellite-based carbon credit platform processing farmland data across any global region. Developed Go REST API backend and Python pipeline for SOC calculations using Sentinel-2 imagery. Integrated Copernicus Data Space API to analyze NDVI, NDMI, and SWIR indices, generating automated PDF reports with WeasyPrint and carbon credit calculations for multiple crop types.

System Logs Anomaly Detector *(Python, PyTorch, ML)*
Collaborated with team to build data preprocessing pipeline with optimized PCAP parser (3x performance boost) for Windows event log analysis. Developed neural network using PyTorch achieving 90% accuracy for threat detection in system logs.

Assembly Algorithms & Systems Programming *(x86 Assembly, Low-Level Optimization)*
Implemented low-level algorithms and system functions in x86 assembly, including parenthesis validation, binary search, quicksort, permission checks. Strengthened understanding of CPU architecture, stack management, recursion, and instruction-level data handling.

Router Dataplane *(C, Networking, Data Structures)*
IP routing dataplane implementing trie-based routing table for efficient lookups, dynamic ARP table management, packet queueing system, ICMP handling, and TTL-aware packet forwarding. Gained hands-on experience with network protocols and low-level packet processing.

Achievements & Activities

Security Summer School CTF (2025) – First place among 30 teams in intermediate-level cybersecurity competition
Perpetuum Competition (2025) – Winner; programmed Arduino for paper plane launcher with sequential action control
HackTheBox – Active member documenting penetration testing and exploitation methods in technical writeups on Medium.

Technical Skills

Programming & Systems: Go, C, C++, Python, Java, Assembly, Bash, Git; multithreading, concurrency, sockets, memory management
Backend & Database: REST APIs, JWT auth, bcrypt, sessions, PostgreSQL, SQLC, Goose, schema design, query optimization
Cloud & DevOps: AWS S3/CloudFront/IAM, presigned URLs, CI/CD, GitHub Actions, Docker, automated testing
Security: Burp Suite, Nmap, Metasploit, Wireshark, PCAP analysis, network security, OWASP Top 10, penetration testing, CTFs

Soft Skills

Qualities: Adaptability, Empathy, Attention to Detail, Critical Thinking, Problem Solving, Collaboration, Stress Management, Responsibility, Time Management, Self Motivation, Communication
Languages: English (C1), Romanian (Native), Russian (Fluent)

Areas of Interest

Ethical Hacking, Digital Electronics, Assembly x86, Systems Programming, Networking, Cloud Computing, DevOps, Software Architecture, Design Patterns, Cybersecurity, Vulnerability Assessment, Embedded Systems, IoT, CI/CD Automation, Machine Learning for Security