ION - DANIEL **VOICULESCU**

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WORK EXPERIENCE

Harman International, Bucharest – *Senior Software Engineer*
AUGUST 2022 - PRESENT

- Led the refactoring of legacy diagnosis applications into a high-performance, multithreaded architecture. Designed a centralized API that unifies cross-team **CAN** interactions. This design decoupled dependencies and enabled parallel execution, significantly boosting system throughput.
- Directed the full-lifecycle development of a complex suite of remote services, delivering high-impact features such as Stolen Vehicle Tracking, Geofencing, Remote Door Control, and Remote Diagnosis/Data Collection.
- Mentored junior engineers, conducting code reviews and guiding architectural decisions. Played a key role in scaling the team by defining technical hiring criteria and conducting interviews.
- Operated as the lead technical delegate for on-site client consultations. Successfully bridged the gap between client business requirements and technical specifications, ensuring accurate implementation and strengthening the client relationship.

NortonLifeLock / Avira / BullGuard, Bucharest – *Software Engineer*
Retained through successive acquisitions (BullGuard acquired by Avira, Avira acquired by Norton)
MAY 2020 - JULY 2022

C++ Software Engineer **(NortonLifeLock)**
APRIL 2022 - JULY 2022

- Engineered a new secure backup module using **C++** and the **Win32 APIs**, successfully porting functionality from a legacy application to a modern architecture.
- Collaborated with the Software Architect to design a streamlined, decoupled interface, ensuring high maintainability and scalability of the new module.
- Led the code refactoring process, analyzing existing dependencies to remove obsolete libraries and identify modern replacements, resulting in a leaner application footprint.
- Supervised the implementation phase, conducting code reviews and coordinating with the development team to ensure adherence to design specifications and security standards.

C++ Software Engineer **(Avira)**
JANUARY 2022 - APRIL 2022

- Architected the core performance optimization module in **C++,** utilizing**Win32 APIs** to optimize system resources for gaming workloads, achieving a **20%** performance increase (FPS & network latency) on low-end hardware.
- Implemented process priority elevation and I/O priority hints to dynamically reallocate CPU and disk resources to active game processes.
- Developed a custom **OpenGL** benchmarking tool to simulate GPU-intensive scenarios, measuring frame time and shader performance to validate optimization logic.

C++ Software Engineer **(BullGuard)**
MAY 2020 - DECEMBER 2021

- Maintained and optimized a local network monitoring core module written in **C++**, utilizing **CEF** for a responsive, modern user interface.
- Improved field diagnostics by restructuring logging mechanisms and telemetry data, allowing the engineering team to rapidly identify root causes in production environments.
- Collaborated on the integration of **Nmap**, translating raw network data into actionable security insights (vulnerability status, device type) for the end-user.

Bitdefender, Bucharest – *Software Engineer Intern*
JUNE 2019 - DECEMBER 2019

- Developed a log analysis automation tool to parse complex installer logs and convert them into a standardized **XML/JSON** format, significantly reducing manual review time.
- Engineered a triage engine that programmatically scans intermediate logs to identify common failure patterns and generate instant diagnostic insights.
- Collaborated with the Support Team to define technical specifications and data requirements, ensuring the tool directly addressed the most frequent troubleshooting bottlenecks.

EDUCATION

University Politehnica of Bucharest – *Information Technology Management Master's*
Faculty of Automatic Control and Computer Science
OCTOBER 2020 - JUNE 2022

- **Postgraduate Coursework**: Startup Engineering, Accessing Non-Reimbursable National And European Funds, Information Management and Security, Intelligent Internet Systems, IT Management Of Business Processes, IT Project Management.

University Politehnica of Bucharest – *Computer Science and Engineering Bachelor's*
Faculty of Automatic Control and Computer Science
OCTOBER 2016 - JUNE 2020

- **Undergraduate Coursework**: Numerical Methods, Data Structures, Introduction to Assembly Language, Programming Paradigms, Object Oriented Programming, Analysis of Algorithms, Algorithms Design, Performance Evaluation, Communication Protocols, Local Networks, Web Programming, Parallel and Distributed Algorithms, Software Project Management.

PROJECTS

Carillon – *Anti-Ransomware Tool*
Designed a comprehensive security tool featuring a Kernel-mode **Minifilter driver** (**C**) for file system monitoring and a **C++** user-mode agent for heuristic analysis. Implemented a "cloud-immunization" feature that updates a central database and protects all network endpoints instantly upon detecting a local threat. Built a **C#** control interface and custom installer for deployment and management.

imDifferent – *Sentry Turret*
Designed and prototyped a robotic turret system powered by an **ATmega324** microcontroller, controlling dual stepper motors for precise pan-and-tilt movement. Developed the embedded firmware in C, implementing **USART** communication to receive real-time coordinate data from a host PC. Engineered a computer vision subsystem using **C++** and **OpenCV** to detect targets, calculating depth from 2D images using **spline interpolation** algorithms. Integrated hardware drivers for stepper motors, ensuring smooth acceleration profiles and accurate mechanical positioning based on visual feedback.

ShapeshifterCLI – *Image Editor*
Built a distributed image processing tool in **C** using **MPI** to parallelize tasks like **SSAA** resizing, compression, and convolution filtering. Implemented data decomposition strategies to split images into pixel matrices, processing chunks concurrently before aggregating the final result.

Other projects:
Kermit file transfer protocol (**C**), Memory Allocator (**malloc/calloc** implementation in **C**), Internet Banking and Stock Exchange simulation (**TCP** and **UDP** sockets, **Java**, design patterns: **singleton, visitor, factory** and **observer**).

PROGRAMMING LANGUAGES AND TECHNOLOGIES

Languages:
C++11/14/17, C++POSIX/Win32, C(Kernel/Embedded), C# (.NET), Python, Assembly (x86), Javascript.

Windows Internals:
Win32 API, Minifilter Drivers, WDK (Windows Driver Kit), Multithreading & Concurrency, Memory Management.

Security & Networking:
Malware Analysis, Reverse Engineering, Heuristics, Cryptography, Nmap, TCP/IP, Packet Inspection.

HPC & Embedded:
MPI (Message Passing Interface), OpenMP, OpenCV (Computer Vision), OpenGL, UART/USART, Microcontrollers (ATmega).

Tools & DevOps:
Visual Studio, WinDbg, Git, CMake, Kibana, Atlassian suite (JIRA, Confluence, Bitbucket, Bamboo).

Experience and knowledge about: Web development (Java, ReactJS, VueJS, HTML/CSS, SEO), Databases (SQL, NoSQL), Network administration, UNIX, Kibana, Machine learning (RNN, CNN, NLP, Clustering, Classification), Blockchain**.**

LANGUAGES

Romanian (Native), English