

# Durnea Maxim

📍 Bucharest, Romania    ✉ mdurnea4@gmail.com    ☎ 741011243  
🌐 max-durnea

## Education

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**Politehnica University of Bucharest** 2023 - 2027  
*BS in Computer Engineering*  
**Relevant Coursework:** Data Structures and Algorithms, Operating Systems, Numerical Methods, Linear Algebra, Object-Oriented Programming, Communication Protocols  
**Baccalaureate grade:** 9.25/10

## Projects

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**System Logs Anomaly Detector** [GitHub](#)  2024

Developed as part of the 12th edition of the EESTEC OLYMPICS Hackathon in November 2024, this project focused on classifying Windows system logs to identify abnormal behaviors using machine learning.

- My role: Developed the PCAP to JSON Processor Script, converting raw PCAP files into JSON format for easier analysis.
- Collaborated with team members on data engineering and neural network model development using PyTorch.
- Achieved a 90% accuracy rate for classifying system log events, demonstrating the effectiveness of our data preprocessing and machine learning techniques.
- The project was executed within an isolated Ubuntu container, optimizing the processing time within the 2-minute execution limit.
- Output: JSON file containing the predicted labels for each test file, providing insights into potential security threats.

**Parallel Firewall** [GitHub](#)  2024

Designed and implemented a multi-threaded firewall in C to filter real-time traffic.

- Used pthreads for concurrent packet processing, reducing latency and increasing performance.
- Optimized detection algorithms to prevent malicious traffic and enhance the firewall's efficiency.

**Router Simulation Using Mininet** [GitHub](#)  2025

Developed a custom router simulation using the Mininet tool, connecting to 4 hosts with containerization, as part of a lab project focused on networking concepts.

- Focused on understanding packet forwarding and transmission over the network.
- Analyzed packet transmission using Wireshark to monitor network traffic and identify potential issues.
- Gained valuable insights into how packets are transmitted and changed over the network, emphasizing network performance and security.

**Assembly Code Repository** [GitHub](#)  2024

Repository contains various assembly projects, demonstrating a deep understanding of low-level programming.

- Implemented algorithms such as Quicksort, BubbleSort, and Binary Search.
- Created a simple print functionality using system calls, showcasing system-level programming skills.

## Extracurricular Activities

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- Engage in Capture The Flag (CTF) challenges to enhance problem-solving and cybersecurity expertise.
  - Actively participate in hackathons, collaborating on innovative solutions and tackling real-world technical challenges.
  - Currently pursuing the Penetration Tester path on HackTheBox Academy.

## Skills

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### **Programming Languages:**

- Intermediate: Python, C, Java, C++, Racket, Assembly
- Beginner: Bash,

### **Tools:**

- Git – Experienced in version control, branching strategies, and collaborative development.
- Burp Suite, Nmap – Used for penetration testing and network reconnaissance.
- Hydra – Utilized for buffer overflow exploitation in security research.

### **Operating Systems Knowledge:**

- Memory management, system calls, multithreading, and socket programming.
- Knowledge in low-level programming and operating system internals.

**Operating Systems:** Proficient in using the Linux terminal for system administration,

**Languages:** English (C1), fluent Romanian and Russian.