ALEXANDRU-GABRIEL VASILE

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Education and Certifications

University POLITEHNICA of Bucharest Expected graduation date: Jun. 2026
Bachelor's Degree, Computer Science |

- Finished first and second year with a cumulative grade of **9.34/10**.
- Relevant Courses: **Computer Programming, Data Structures and Algorithms, OOP, Numerical Methods**.

Machine Learning Specialization, DeepLearning.AI, Stanford University, Sep 2024
Deep Learning Specialization, DeepLearning.AI, Oct 2024

Projects

Supervised & Unsupervised Machine Learning - Julia & Python Jul 2024 - Oct 2024

- A collection of **supervised and unsupervised** learning algorithms written in **Julia** and **Python(Tensorflow, Keras)** that reliefs **basic knowledge and theory** in **machine learning**.
- In supervised part, the collections contains different **regressions models** and **neural network architectures** trained with labeled and unlabelled datasets featuring **Image Recognition, Image Segmentation, Object Detection, Style Transfer** and **Natural Language Processing.**
- In unsupervised part, the collections contains **Clustering Algorithms** and **Anomaly Detection**.

Dataplane Router - C Mar 2024 - Apr 2024

- The project consists of implementing a **dataplane** for a router and simulated on 4 hosts connected to two routers.
- The implementation is responsible for **forwarding** packages to destination, **ARP** protocol and **ICMP** protocol.

GlobalWaves x Http - Audio Player - Java Nov 2023 - Jan 2024

- A **spotify-like player** with functionalities ranging from basic audio playback **(search, next, prev, top5)** to complex features like **analytics, recommendations,** and **monetization strategies** based on data collected from all users.
- The program uses particular **design patterns** (Strategy, Command, Observer) and various **data structures**.
- The **Audio Player** is incorporated into a **Http-server** where **multiple web-clients** can do requests on server.

Load Balancer - C Apr 2023 - May 2023

- This program simulates a mechanism frequently used in distributed systems and has the advantage of fulfilling the **minimal disruption constraint**, i.e. minimizing the number of transfers required when a server is stopped or started.
- The program uses **Consistent Hashing** on a **hash-ring** structure which can contain up to **100.000 linked servers**.

Virtual Memory Allocator - C Mar 2023 - Apr 2023

- Developed an entire virtual memory allocator that had the role of **reserving memory**, at the library level, traditionally through memory calls such as **malloc()** or **calloc()**.
- Also, the memory allocator deals with **freeing reserved** areas, the related library call being **free()**.

PPM Image Editor - C Nov 2022 - Jan 2023

- An entire photo editor built to handle **.ppm** and **.pgm** files and apply different **effects** and **filters** such as **crop, rotate, Edge, Sharpen, Blur** using kernels and convolution matrices.
- Special features for **black and white** pictures such as **histogram** (displays a histogram of the gray shades used) and **equalize** (adjust the contrast of an image by modifying the intensity distribution of the histogram).

Volunteering and Extracurricular

LSAC - association for students

- Orchestrating **workshops, coding sessions, and events** to enhance skills and encourage continuous learning.

Competitive Programming

- Participation in various online programming competitions such as **CodeForces, AtCoder, CodeChef, LeetCode**.

Skills

Programming Languages:
C/C++, **Java**, Julia, Python, Assembly Languages, Octave

Technologies & Tools:
TensorFlow, Keras, Flask, Git, Linux, Docker

Languages:
Romanian(Native), English(Fluent)