



## Marius Alexa

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### WORK EXPERIENCE

**HEAD CHEF – U.M. 02543 IASI - DOMAINS AND INFRASTRUCTURE CENTER NO. 5** – 1 Feb 2026 – Current – IAȘI, ROMANIA

**Overseeing the planning, design, and execution of infrastructure investment projects**, ensuring compliance with technical, financial, and regulatory requirements.

**Coordinating and supervising current repair and maintenance activities** to ensure the proper operation, safety, and technical condition of facilities and infrastructure.

**Managing the organization's real estate assets**, including property administration, technical records, efficient use of facilities, and compliance with applicable property management regulations.

**LEAD ENGINEER – U.M. 02543 IASI - DOMAINS AND INFRASTRUCTURE CENTER NO. 5** – 1 Jan 2021 – 31 Jan 2026 – IAȘI, ROMANIA

Responsible for overseeing technical operations, coordinating engineering activities, ensuring compliance with technical standards, and providing expert guidance to support the organization's objectives.

**MILITARY OFFICER - MAINTENANCE AND CIVIL ENGINEERING AND BUILDING SERVICES ADVISOR – U.M. 02543 IASI - DOMAINS AND INFRASTRUCTURE CENTER NO. 5** – 30 Nov 2018 – 31 Dec 2020 – IASI, ROMANIA

- time tracking of Civil Engineering and Building Services works;
- preparation of documentation specific to Building Services works;

**MILITARY OFFICER - DATABASE MANAGER – U.M. 01835 BUCURESTI - AIR FORCE SIMULATION TRAINING CENTER** – 30 Jun 2016 – 30 Nov 2018 – BOBOC, ROMANIA

- database management (building, maintenance, update systems, sensors, tree organizational);
- management, maintenance and update simulation software;
- air defense artillery specialists and fixed/rotary wing pilots training;
- network management (OS - Red Hat);

**MILITARY OFFICER - HUMAN RESOURCES MANAGER – U.M. 01535** – 14 Aug 2014 – 29 Jun 2016 – FOCSANI, ROMANIA

- advice staff on issues of human resources ;
- career manager;

**MILITARY OFFICER - CHIEF OF COMMUNICATIONS, INFORMATICS AND SIGNALS – U.M. 01110** – 31 Dec 2009 – 14 Aug 2014 – IASI, ROMANIA

- design construction and management data networks and voice ;
- insurance IT services (hard and soft);

**MILITARY OFFICER - HUMAN RESOURCES MANAGER – U.M. 01535** – 14 Aug 2005 – 30 Dec 2009 – FOCSANI, ROMANIA

- advice staff on issues of human resources ;
- career manager;

- specific activities and operating complex anti-aircraft 2x35mm Oerlikon Contraves;
- integration and management fire control unit in centralized mode;

● **EDUCATION AND TRAINING**

30 SEP 2020 – 14 JUL 2022  
**MASTER’S DEGREE BUIDING SERVICE** Technical University "Ghe. Asachi" from Iasi, The Faculty of Civil Engineering and Building Service

**Address** Iasi

30 SEP 2018 – 29 JUN 2022  
**LICENSE BUILDING SERVICE ENGINEER** Technical University "Ghe. Asachi" from Iasi, The Faculty of Civil Engineering and Building Service

**Address** Iasi

30 SEP 2003 – 29 JUN 2005 Iasi, Romania  
**POSTGRADUATE STUDIES IN COMPUTER SCIENCE** Faculty of Computer science, "Alexandru Ioan Cuza" University

31 AUG 1996 – 29 JUL 2000 Brasov, Romania  
**LICENSE - MANAGEMENT ORGANIZATIONS AND ELECTRONIC** Air Force Academy "Henri Coanda"

**Address** Brasov, Brasov, Romania

31 AUG 1992 – 29 JUN 1996 Campulung Moldovenesc, Romania  
**HIGH SCHOOL** Military High School"Stefan cel Mare"

● **LANGUAGE SKILLS**

Mother tongue(s): **ROMANIAN**

Other language(s):

|                | UNDERSTANDING |         | SPEAKING          |                    | WRITING |
|----------------|---------------|---------|-------------------|--------------------|---------|
|                | Listening     | Reading | Spoken production | Spoken interaction |         |
| <b>ENGLISH</b> | C1            | B2      | B2                | C1                 | B2      |
| <b>FRENCH</b>  | A2            | B1      | A2                | A2                 | A2      |

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **SKILLS**

AllPlan | Dialux EVO | Visual Studio C# | AutoCAD | Microsoft Office | Google Drive | Social Media | ANSYS design modeler

● **CONFERENCES AND SEMINARS**

1 JUL 2021 – 2 JUL 2021  
**Graphic application for simulating lighting control schemes, Installations for construction and energy saving, Techincal University "Ghe. Asachi", Iasi**

1 JUL 2021 – 2 JUL 2021  
**Comparative analysis of the heat requirement for an individual residence, Installations for construction and energy saving, Techincal University "Ghe. Asachi", Iasi**

## AFASES 2017

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5 MAY 2000 – 7 MAY 2000

### **The role of software in education, Communication session of the circles of the scientific paper, Technical University "Transilvania", Brasov**

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10 MAR 2000 – 12 MAR 2000

### **Secoter, Communication session of the circles of scientific, "Nicolae Balcescu" Field Defense Academy, Sibiu**

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18 JUN 1998 – 20 JUN 1998

### **Session of scientific presentations and papers student , in air defense systems, "Henri Coanda" Air Force Academy, Brasov**

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## ● **PROJECTS**

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1 OCT 2021 – 31 MAY 2022

### **Analysis of the performance of power supply installations with electricity with photovoltaic panels**

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The Cool-PV software is an graphic application developed on the Microsoft Visual Studio platform C# and is intended for analyzing, performing calculations and dimensioning a photovoltaic (PV) system, in depending on the number and type of electrical receivers or the estimated energy consumption (kWh / month) for a household or non-household consumer. Another function of the software is the economic calculation regarding the amortization of the investment, after a analysis that takes into account all the input data (location, PV orientation, tilt angle, etc.) and data from output (average energy production of the photovoltaic panels and the photovoltaic system), over a period of 20 years, taking into account the degradation of PV over time. With the help of the software, an analysis of the way of energy use can be made produced by the photovoltaic system, the optimal period of use of the energy produced and the balance between the amount of energy to be consumed by the beneficiary and the amount of energy injected into National Energy System.

1 OCT 2020 – 30 MAY 2021

### **Graphical interface for simulating lighting and control schemes**

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The lighting control schemes simulator was written in .NET, Visual Studio C # and has implemented 12 electrical appliances, appliances studied during the laboratory hours in the discipline Electrical Appliances, Department of Building Services, The Faculty of Civil Engineering and Building Services, Technical University " Ghe. Asachi" from Iasi

1 OCT 2015 – 30 MAY 2017

### **Gun Star Night Simulator from 2x35 mm Oerlikon Contraves**

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Design, construction and implement a project in "Henri Coanda" Air Defense Academy with regard to the constructive and virtual simulation.

This project is a serious games and it represents the key for the epistemic learning; he is connecting two type of simulation (constructive and virtual simulation) and is designated to train command-control staff and Fire Control Unit users - Gun Star Night from Oerlikon Contraves 2x35 mm.

GSN\_SIM is a simulation program for Gun\*Star Night fire control system destined for learning and involvement of the operators and staff, for training and improving their skills to shorten the preparation time and training costs. The model is a multilevel simulator. The FCU simulator (for individual operator) and the console (for staff or instructor) are connected and are working together, sending, and receiving data and generating reports to staff about how the operator works.

Simulation software can be a way to train even when, for some reason, the technique is unable to be efficient. It also represents a necessary learning tool for the main menus and submenus and the presentation of the art verification algorithms. In current conditions, modern combat no longer leads through direct contact with the enemy, but it is based on information received from higher echelons or the discovery and tracking of its equipment.

In accordance with modern conflict laws, the Gun\*Star Night system uses information received from radar sensors regarding the aerial targets it displays in video format. Target data are displayed while the operator has selected the option of designating the target by radar and has been aligning with the radar.

If the operations have not been performed, no data on the flight parameters of the target will be displayed on the screen. To make it easier to understand the simulator's operations, all data can be entered by the commander/ instructor or operator depending on the scenario.

## ● **JOB-RELATED SKILLS**

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### **Job-related skills**

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- leadership activities in the training simulation (constructive, virtual, distributive);
- planning and leading activities in IT (computer programming, database, networking);
- management training of support staff and specialists in air defence command with the base on the surface, aerial surveillance and military pilots ;

Competent use of computer:

- C/C++, .NET, Visual C#, Visual Basic;
- OS (Windows, Red Hat), Office, network administrator;

## ● **OTHER SKILLS**

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### **Other skills**

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During college days I was a member of the club of satire and humor of "Henri Coanda" Air Defense Academy and I participated in the festivals of the genre.

## ● **COURSES**

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5 JUL 2020 – 16 JUL 2020

**Allplan Engineering Certificate, BIM-iss, 2020**

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5 JUN 2017 – 9 JUN 2017

**Courses**

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Specialist training operators level I and II, Joint Conflict and Tactical Simulation (JCATS);

5 JUN 2017 – 9 JUN 2017

**Courses**

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Modeling Specialist database level I and II , Joint Conflict and Tactical Simulation (JCATS);

1 OCT 2012 – 21 DEC 2012

**Courses**

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CISCO network Academy, "CCNA Routing and switching" at Training Center for Communications and Information Technology, Sibiu, 2012;

## ● **PUBLICAȚII**

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### **Publicații**

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**"Study of high level architecture aplicability in air defense" , Scientific Research & Education in the Air Force - AFASES, 2017;**

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**"Training through simulation in the air defense artillery. Fire control system Gun\*Star Night Simulator", Technical Sciences and Applied Mathematics section in "Henri Coanda" Air Force Academy Scientific Paper, 2010;**

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**Heat required comparison individual housing using SR 1907\_1997, SR 1907\_2014 and European H\_EN\_12831\_RO\_02, 2021**

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**Low voltage electrical machines and appliances - simulate software, 2022**

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**Fire control system Gun\*Star Night - simulate software, 2018**

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28 MAY 2026

**Steady-state thermal assesment of a photovoltaic-driven thermoactive ceramic wall with embedded electric cable for short-term thermal energy storage in buildings**

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8 MAY 2026

**CFD-based numerical analysis of the cooling and water heating process in photovoltaic-thermal (PVT) panel**

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16 APR 2026

**Studiu de caz privind producția de energie electrică a unui sistem fotovoltaic cu ajutorul IA și a interfeței grafice Cool-PVT**

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5 MAR 2026

**Sustainability Assessment of Photovoltaic Panels under Thermal Cycling: An Experimental Study Using a Climate Chamber and Solar Simulator**

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5 SEP 2025

**Experimental investigation of wind effect on roof configurations with photovoltaic panel systems**

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7 MAR 2025

**The use of Artificial Intelligence in evaluation of heat extracted from a PVT panel**

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5 JUL 2024

**Graphical interface for electrical dimensioning of an on-grid photovoltaic system**

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9 MAY 2024

**Graphical interface for electrical dimensioning of an on-grid photovoltaic system**

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5 OCT 2023

**Theoretical analysis of water cooled photovoltaic thermal panels**

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8 SEP 2023

**Theoretical analysis of water cooled photovoltaic thermal panels**

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11 MAY 2023

**Theoretical analysis regarding cooling photovoltaic thermal panels with water - case study**

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Write here the description

6 APR 2023

**Different cooling methods of photovoltaic/thermal panels State-Of-The-Art review**

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1 SEP 2021 – 1 SEP 2022

**Study of HLA aplicability in air defense in the "Military Applications of Modeling and Simulation", Akademia Sztuki Wojennej, Warsaw 2021**

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The complexity and dynamics of the operational environment determine new training and education requirements for human resources. The use of simulation systems is one of the available solutions capable of ensuring the necessary level of training both at the decision-making and execution level. In high-tech fields, such as aviation, air traffic, missiles and anti-aircraft artillery, the simulator is the essential tool for training and improving skills. Virtual and constructive simulators are the evaluation elements without which the transition to the operation of real systems cannot be ensured. The multilevel simulator represents the key to epistemic learning and GSN\_SIM has been designed to operate in a High-Level Architecture (HLA) configuration in terms of both data flow and interoperability.

## ● **ORGANISATIONAL SKILLS**

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### **Organisational skills**

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- good competent planning, organization and coordination of the activities of the training simulation;
- analytical thinking with regard to the real part;
- adaptable to new and team spirit ;
- capacity of motivation of the team;

## ● **COMMUNICATION AND INTERPERSONAL SKILLS**

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### **Communication and interpersonal skills**

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- good communication skills due periods of human resources manager (counseling activities);
- very attentive to details on the functioning of the training systems and simulators for bugs remedy;