

# STUDENTS' INTERNATIONAL CONFERENCE

## CERC 2022

Bucharest, May 12-13, 2022



## AWARDED PAPERS

### 1. ARMAMENT SYSTEMS

**1<sup>st</sup> Prize:** Alexandrescu Costinel, *Incendiary Bomblet Design*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Nuță Cristian-Valentin, *Experimental Studies of Pyrotechnic Tracer Compositions for Observation at Night in Visible and Infrared Spectrum*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Plesca Paul Richard, *Design of the RP99 Turret System in Solidworks*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

### 2. CONSTRUCTIONS AND FORTIFICATIONS

**1<sup>st</sup> Prize:** Bîlea-Pricop Andreea, *Construction of a Ferry Cruise Ship*, „Mircea cel Batrân” Naval Academy of Constanța, Romania;

**2<sup>nd</sup> Prize:** Joldeș Vlăduț Alexandru, *Design of an Administrative Pavilion, with Regime of Height B + GF + 6F, Located in Sighișoara, Mureș County*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Bojoiu Minodora, *Design of an Administrative Pavilion, with a Ground Floor Dining Room, with a Height of S+P+6E, Located in Bacău City*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Forminte Nicoleta, *Design of Apartment Building, with a Height Regime S+P+6E, Located in Câmpulung Moldovenesc, Suceava County*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**Special Prize:** Popescu Robert, *Railway Brigade Design*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.



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### **3. MILITARY ENGINEERING AND GEOMATICS**

**1<sup>st</sup> Prize:** **Ilisei Andreea**, *Deforestation Monitoring with Sentinel-2*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**2<sup>nd</sup> Prize:** **Bercea Anamaria-Izabela**, *Detonation Effects of Unexploded Ordnance in Populated Areas*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** **Dudu Andreea**, *Sympathetic Detonation of Unexploded Ordnance*, Military Technical Academy „Ferdinand I” of Bucharest, Romania

**3<sup>rd</sup> Prize:** **Hogea Raluca Andreea**, *GIS Analysis of Noise Pollution*, Military Technical Academy „Ferdinand I” of Bucharest, Romania

**Special Prize:** **Nemeti Mihai**, *Flood Risk Analysis using Digital Elevation Model and GIS Techniques*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

### **4. AEROSPACE AND MECHANICAL ENGINEERING**

**1<sup>st</sup> Prize:** **Rădoi Ana-Maria**, *The Study of a Miniaturized Capacitive Accelerometer. Mathematical Modeling and Numerical Simulation of a Method used for Detection Unit*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**2<sup>nd</sup> Prize:** **Kłosiński Artur**, *Preliminary Design of a Single-Stage Hybrid Propellant Rocket with CanSat-Type Picosatellites*, Military University of Technology, Warsaw, Poland;

**3<sup>rd</sup> Prize:** **Jaskólski Maciej**, *Conceptual Design of a Hybrid Powerplant for an Unmanned Aerial Vehicle*, Military University of Technology, Warsaw, Poland.

### **5. AUTOMOTIVE ENGINEERING AND MATERIALS TECHNOLOGY**

**1<sup>st</sup> Prize:** **Mocanu Alexandru Mihai**, *Analysis of Thermal Transfer by Heat Exchangers*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**2<sup>nd</sup> Prize:** **Cotoia Razvan**, *Understanding Engine Sensors*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** **Rablău Claudiu-Ionuț**, *New Car Technology in the Context of Road Traffic Collision*, „Alexandru Ioan Cuza” Police Academy of Bucharest, Romania.

**Special Prize:** **Văduva Alexandra Maria and Guiu Constantin Darius**, *Technological Advancements in Automotive Industry Nowadays*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

### **6. COMMUNICATIONS AND SIGNAL PROCESSING**

**1<sup>st</sup> Prize:** **Haralambie Florin**, *Putting Chaos Back to Order*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**1<sup>st</sup> Prize:** **Ilie Cristian**, *Security Solutions for Web Applications*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**1<sup>st</sup> Prize:** **Maftai Silviu**, *Elliptic Curve Cryptography Fundamentals*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**1<sup>st</sup> Prize:** **Zaharia Ana-Maria**, *Practical Implementation of Reflectors for Wi-Fi Antennas*, „Nicolae Bălcescu” Land Forces Academy of Sibiu, Romania.



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**2<sup>nd</sup> Prize:** Neacă Alexandra-Cristina, *Automatic Sound Recognition System using Artificial Intelligence*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Văduva George-Sebastian, *Data Extraction from Social Media and Text Analysis using Artificial Intelligence*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Horotan Gratian, *Data Center Interconnect*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

### 7. ROBOTICS, AUTOMATION AND ELECTRONIC SYSTEMS

**1<sup>st</sup> Prize:** Stosio Łukasz and Walasek Daniel, *Different Approaches to Automatically Moved Robots*, Military University of Technology, Warsaw, Poland;

**2<sup>nd</sup> Prize:** Olariu Andrei and Pascu Marian, *Autonomous Weather Station – from Concept to Prototype*, „Nicolae Bălcescu” Land Forces Academy of Sibiu, Romania;

**3<sup>rd</sup> Prize:** Jančić Stefan, *Universal Development Board Based on AVR Architecture Microcontroller and its Implementations*, Military Academy of Belgrade, Serbia.

### 8. COMPUTER SCIENCE AND CYBER SECURITY

**1<sup>st</sup> Prize:** Pilipăuțanu Porfirie-Denissa, *Grammar - Based Procedural Generation of Programming Exercises*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**1<sup>st</sup> Prize:** Vaman Adina-Maria, *Hypervisor-Based Intrusion-Detection System*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Luca Marian-Emilian, *Interlocutor Profile Detection System*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Zaharia Ciprian, *Data Protection Using “On-The-Fly” Encryption*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Cioacă Andrei, *Automatic Identification of Similarities between Functions of Malware Files*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Grecu Teodora, *Specialized Systems SOC Implemented with FPGA*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**3<sup>rd</sup> Prize:** Śmieja Maciej and Śmieja Marcin, *Shape Detection using Image Processing Techniques*, Military University of Technology, Warsaw, Poland.

**Special Prize:** Marghescu Bogdan, *Landmark Recognition App Using MobileNetV3*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**Special Prize:** Lihor Ioachim, *Fake News Analysis*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

### 9. MATHEMATICS APPLIED IN ENGINEERING

**1<sup>st</sup> Prize:** Coverca Robert-Gabriel, Danescu Darius-Teodor and Nicolae Alexandru-Stefan, *Advanced Mathematics and Nanotechnology*, „Politehnica” University of Bucharest, Romania;

**1<sup>st</sup> Prize:** Stańska Marta, *A Stand to Support the Tracking Process of Artificial Earth Satellites*, Military University of Technology, Warsaw, Poland;

**2<sup>nd</sup> Prize:** Maria-Fulașu Andra-Cristiana and Peleskov-Glavatckii Semion, *Fractals, Multifractals and Metrical Digitalization with Applications in Music*, „Politehnica” University of Bucharest, Romania;



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**2<sup>nd</sup> Prize:** Tănase Eduard and Uță Gadiela-Daiana, *Sequential Control in Intelligent Lighting Systems with Integrated Alarms*, „Politehnica” University of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Leanca Razvan-Andrei and Balacescu Anamaria, *Comparison of MDS and PCA Dimensional Reduction Methods Applied in Image Classification*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**Special Prize:** Fricosu Laura Maria, Ene Alexandru Florin, Gheorghiu Ruxandra Ioana Maria and Stoica Fabian Andrei, *Replicating Images with Epicycles using the Fourier Transform*, „Politehnica” University of Bucharest, Romania.

### **10. MILITARY SCIENCE**

**1<sup>st</sup> Prize:** Salesini Victor, *European Gas*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Buzatoiu Alexandra-Ioana, *Israeli–Palestinian Conflict*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

**3<sup>rd</sup> Prize:** Marchlewski Eryk, *Disinformation and its Ongoing (R)evolution*, Military University of Technology, Warsaw, Poland.

### **11. MANAGEMENT**

**1<sup>st</sup> Prize:** Ducu Elena-Diana, Antimiu Roxana-Mihaela and Vieru Ioana, *Five Steps Efficiency of Modern Student Time*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Boiu Maria, Gutue Andreea and Nițoi Elena, *The Mystery of Managing Time: Learn to Turn the Hourglass in your Favor*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** Maticiuc Cristian Andrei, Mateiciuc Alexandru and Bancu Cristian Georgian, *Strategic Planning*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**Special Prize:** Tabita Alexandru, *Business Strategy vs Military Strategy*, Bucharest University of Economic Studies, Romania.

### **12. ENGLISH LANGUAGE**

**1<sup>st</sup> Prize:** Buzatoiu Alexandra-Ioana, *Happiness by Ignorance in Ray Bradbury's 'Fahrenheit 451'*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** Marchlewski Eryk, *Language Mastery can Boost your Brain – Need for STANAG Level 4 Speakers*, Military University of Technology, Warsaw, Poland;

**3<sup>rd</sup> Prize:** Antofie Bianca-Gabriela and Ivănescu Georgiana-Florentina, *How Free is our Will?*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**Special Prize:** Băiceanu Torino-Iulian and Cinar Vasile, *Hegemonic America - The Rise of a Superpower and its Worldwide Cultural Influence*, „Nicolae Bălcescu” Land Forces Academy of Sibiu, Romania;

**Special Prize:** Bodean Raluca, *Translating your own poetry: Difficulties and Observations*, University of Bucharest, Romania.



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### **13. FRENCH LANGUAGE**

**1<sup>st</sup> Prize:** **Buzatoiu Alexandra-Ioana**, *L'Histoire du Cinéma Français et la Nouvelle Vague*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** **Voicu David-Nicolae and Ioncea Mihai-Cristian**, *La menace écologique aujourd'hui*, Military Technical Academy „Ferdinand I” of Bucharest, Romania.

### **14. INTERCULTURAL COMMUNICATION**

**1<sup>st</sup> Prize:** **Ion Maria-Daria and Deac Maria**, *Real vs Fake News: Harmful Consequences of Disinformation Discourse in a Society Addicted to Social Media*, „Nicolae Bălcescu” Land Forces Academy of Sibiu, Romania;

**2<sup>nd</sup> Prize:** **Vacariu Oana-Andreea**, *The Impact of Intercultural Communication on Understanding Cultures*, „Alexandru Ioan Cuza” Police Academy of Bucharest, Romania;

**3<sup>rd</sup> Prize:** **Marchlewski Eryk**, *Why Military Academies Need Student Associations Cooperating at International Level?*, Military University of Technology, Warsaw, Poland.

### **15. ERASMUS+ AND MILITARY ERASMUS EXPERIENCES**

**1<sup>st</sup> Prize:** **Czarnecka Natalia<sup>1)</sup> and Miuță Ioan-Adrian<sup>2)</sup>**, *Mobility or Mobilization?*, <sup>1)</sup> Military University of Technology, Warsaw, Poland, <sup>2)</sup> „Nicolae Bălcescu” Land Forces Academy of Sibiu, Romania;

**1<sup>st</sup> Prize:** **Popovici Cristina**, *Erasmus - A life Changing Experience*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** **Curta Cristian, Deară Bianca-Ioana and Purcăruș Raluca-Ioana**, *Erasmus: a Balance Between Research and Fun*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**2<sup>nd</sup> Prize:** **Rotaru Razvan and Petrescu Iuliana Maria**, *ERASMUS - Open Doors for Open Minds*, Military Technical Academy „Ferdinand I” of Bucharest, Romania;

**3<sup>rd</sup> Prize:** **Dimitrov Georgi**, *Erasmus Mobility from Bulgarian Naval Academy to Romania*, „Nikola Vaptsarov” Naval Academy of Varna, Bulgaria;

**3<sup>rd</sup> Prize:** **Gigerl Johannes and Wohlgenannt Gernot**, *Austrian Cadets in Romania – Erasmus Experience*, Theresan Military Academy, Wiener Neustadt, Austria;

**Special Prize:** **Azam Romain, Decung Alexis and Flourou Thomas**, *Mobility between „Paul Sabatier” University of Toulouse and Military Technical Academy "Ferdinand I", „Paul Sabatier” University of Toulouse, France.*

**Military Technical Academy "Ferdinand I" of Bucharest  
Vice-Rector for Interuniversity Relations  
Chairman of Student's International Conference CERC 2022  
Cpt.cdr.Assoc.Prof.Eng. PhD**

**Cristian-Emil MOLDOVEANU**