



**STUDENTS' INTERNATIONAL
CONFERENCE CERC 2019**
April 23-25, 2019



AWARDED PAPERS

1. ARMAMENT SYSTEMS

1st Prize: Răzvan Mircioagă, *Study on the Influence of the Weapon's Mass Distribution on its Ballistic Performances*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: Anca-Maria Andrei, *Gunshot Acoustic Fingerprint*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: Oana Hoza¹⁾, Alexandra Hoza²⁾, *The Chemistry of Nerve Agents*, ¹⁾Military Technical Academy "Ferdinand I" of Bucharest, Romania, ²⁾Medical Military Institute, Târgu Mureș, Romania

Special Prize: Marko Antonijević, *Passive Range Estimation Based on Extracted Object in an Image*, University of Defence, Belgrade, Serbia

Special Prize: Alexandru Rancea, *Functions for External Ballistics*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2. CONSTRUCTIONS AND FORTIFICATIONS

1st Prize: Beatriz Arancón, *Development of a Sustainable Model for Risk Assessment of Technical Damages in Construction*, University of the Basque Country, Bilbao, Spain

2nd Prize: Ruxandra Ștefania Burța, *Wind Turbines*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: Paul Opreș, *Designing a Multi-Family Residential for the Employees of Poarta Albă Prison, Medgidia, Constanța*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: Alejandro Casanova González, Antonio Viguera-Rodríguez, Luis G. Castillo Elsitdié, Juan T. García Bermejo, *Development of a Lorca DMA's Water Supply System Plan*, Polytechnic University of Cartagena, Spain



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3. MILITARY ENGINEERING AND GEOMATICS

1st Prize: Dawid Wojciech, *Automation of Military Passability Maps Development and an Analysis of the Possibilities of Automated Data Visualisation in GIS Servers*, Military University of Technology in Warsaw, Poland

2nd Prize: Valentin-Alexandru Sturzu, *Study on the Effect of a Mine Explosion on the Ship's Hull*, „Mircea cel Batrân” Naval Academy, Constanța, Romania

3rd Prize: Bogdan Olaru, *The Effects of Explosions on the Human Body*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: Robert-Cristian Dumitrașcu, Manuela Carolina Moga, *Change Detection Analyze Using GIS Environment*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

4. AEROSPACE AND MECHANICAL ENGINEERING

1st Prize: Radu Cristian Gabor, *Designing the Compressor of a Double Flow Turbine Engine Designed to Equip a Transport Aircraft*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: Alexander Monov, *Flight Data Monitoring Principles and Implementation within the Aviation Industry*, "Vasil Levski" National Military University, Dolna Mitropolia, Bulgaria

3rd Prize: Florin Feștilă, *Design and Build of a 3D Printed Two Stage Gear Reducer Model*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: Gabriel Mihalache, Călin Fador, *Developing an Airspeed Monitor and Control Module for an Electric Powered Small-Scale UAV*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: Dan-Nicolae Bălan, Maria Mărgărițoiu, *Experimental Study on a Low Speed Airfoil*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: Cătălin Gutanu, Mihai-Ionuț Nacu, *Development of an Aerodynamic Control Surface Actuator for a Small Scale UAV*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: Adam Prisăcaru, *Designing and Manufacturing a Model Turbo-Jet Engine*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

5. AUTOMOTIVE ENGINEERING

1st Prize: Udrea Mariana-Mădălina, *Hydrodynamic Study for the Calculation of Resistances of an Amphibious Vehicle*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: Man George Florin, *The Calculation of a Ship's Hydrodynamic Coefficients Based on CFD Simulation Results*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: Stanciu Robert Cristian, *Calculation and Construction of Auxiliary Naval Generators. Fuel Supply System in Monobloc Variant*, „Mircea cel Batrân” Naval Academy, Constanța, Romania



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6. MATERIALS TECHNOLOGY

1st Prize: **Jakub Horníček**, *Duplex Coating on Stainless Steel*, University of Defence, Brno, Czech Republic

2nd Prize: **Sonia Olmos Espinar**, *Elimination of Microplastics in Sewage Plants with Activated Sludge Process*, Polytechnic University of Cartagena, Spain

3rd Prize: **Lukasz Szlaga**, *Research on Mechanical and Tribological Properties of Composites Based on Polymers*, Military University of Technology in Warsaw, Poland

7. COMMUNICATIONS

1st Prize: **Răzvan Petru Scripcaru**, *Desktop Application for Detection and Localization of Transient Signals*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Mădălin-Gabriel Alpida**, *Studying Gadgets Using Reverse Engineering Method*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: **Constantin Marius Tolea**, *UGV System for Detecting Buried Metals*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Nicolae-Vlad Micu**, *Mobile Networks for Crisis Situations*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Mihai Ilie**, *Detection and Localization System in UWB Technology*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Linko Nikolov, Kalin Georgiev**, *An Approach for Wireless Networks Security Testing*, „Vasil Levski” National Military University, Artillery, Air Defense and CIS Faculty, Shumen, Bulgaria

8. SIGNAL PROCESSING

1st Prize: **Caspar van Wamel**, *Detection of Ballistic Missiles Using a Schelkunoff Synthesis*, Netherlands Defence Academy, Utrecht, The Netherlands

2nd Prize: **Alexandru-Mădălin Vizitiu**, *Technical Solutions for Detecting and Analyzing Compromising Radiation Generated by USB Keyboard Communication*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: **Dragoş Nastasiu**, *Smartphone-Based Alert System for Monitoring Electrical Systems*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Constantin Stoian**, *The Generation of the Microwave Image*, Military Technical Academy "Ferdinand I" of Bucharest, Romania



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9. ELECTRICAL ENGINEERING AND ELECTRONIC SYSTEMS

1st Prize: **Josef Blazek, Josef Bajer**, *Ultra Wide Band Positioning System*, University of Defence, Brno, Czech Republic

2nd Prize: **Karel Glasl, Josef Bajer**, *Ultrasonic Aircraft Airspeed Measurement*, University of Defence, Brno, Czech Republic

3rd Prize: **Mateusz Kaszyński**, *The Ultrasonic Radar Concept*, Military University of Technology in Warsaw, Poland

10. ROBOTICS AND AUTOMATION

1st Prize: **Silviu-Andrei CROITORU**, *Autonomous Cargo Robot with Artificial Intelligence for Tactical Operations*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Ioana NICULESCU-CARANFIL**, *Virtual Reality as a Help in Tank's Training*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: **Dumitru COSTIUC, Andrei DUTCEAC**, *Remote Controlled Automated Mobile Target used for Shooting Drills*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

11. COMPUTER SCIENCE, MODELLING AND SIMULATION

1st Prize: **Marius-Cristian Andrei**, *Local Area Network Traffic Analyzer on Hybrid Platform with Microprocessor and FPGA*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Jan Pecina, Josef Bajer**, *Parallel Computing in Positioning Systems*, University of Defence, Brno, Czech Republic

3rd Prize: **Anamaria Gabriela Stanciu**, *A Multi-Algorithm System for Fingerprint Matching*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **George-Andrei Dima**, *Software Platform for Real Time Applications Designed with Specialized Systems*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Petrică-Daniel Stoica**, *Software Application for Spoken Language Detection*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Răzvan-Constantin Stoleriu**, *Android Application Security*, Military Technical Academy "Ferdinand I" of Bucharest, Romania



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12. MATHEMATICS APPLIED IN ENGINEERING

1st Prize: **Teodor Lupoiu**, *Recurent Neural Network for Financial Predictions*, University „Politehnica” Bucharest, Romania

2nd Prize: **Alexandru Băluță, Florin Bogdan, Radu-Răzvan Roman**, *Applications of the Fluid Masses Continuity Equation in the Study of the Performance of Natural*, „Lucian Blaga” University of Sibiu, Romania

3rd Prize: **Ciprian Florin Zaharia, Adina-Maria Vaman**, *Singular Value Decomposition-Applications in Image Processing*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Mircea-Traian Tudosie, Ana-Maria Ivănescu**, *Calculating the Gross Domestic Product of a Country Using Fractional Calculus*, University „Politehnica” Bucharest, Romania

Special Prize: **Ristić Dušan**, *Extensive Monte Carlo Simulations for Performance Comparison of CA-CFAR and OS-CFAR Detectors in Different Types of Clutter*, University of Defence, Belgrade, Serbia

13. APPLIED PHYSICS

1st Prize: **Cristian Ilie, Florin Haralambie**, *The Second Quantum Revolution*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Dragoș Mihai**, *Antimatter Appliances*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

14. MILITARY SCIENCE

1st Prize: **Christos Angelopoulos**, *The EU Rapid Response Force*, Hellenic Airforce Academy, Athens, Greece

2nd Prize: **Șerban-Ionuț Oboroceanu, Silviu-Marius Perju**, *Acknowledging Kurdish People's Right to Self-Determination*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: **Constantin Mateescu, Cristian Beldie**, *Military Art in NATO Theatres*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Daniel Borzuchowski, Łukasz Czerniak**, *Prevention Against Reconnaissance of Military Installations by Unmanned Aerial Vehicles*, Military University of Technology in Warsaw, Poland

Special Prize: **Robert-Gigi Albu, Alexandru Juravle**, *"Superpowers" in Military Domain*, „Mircea cel Bătrân” Naval Academy, Constanța, Romania



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15. MANAGEMENT

1st Prize: **Andrei Cosmin Spoială, Roxana Butnariu**, *Emotional Intelligence and Leadership*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Bianca Nicoleta Bran, Alexandra Elena Gurgu**, *Leadership*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: **Daiana Cîmpean, Ștefan Gagyi**, *Leadership - Serving or Being Served?*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Radu Stoian, Diana-Mariana Bledea**, *Principles of Logistics Management*, „Nicolae Balcescu” Land Force Academy of Sibiu, Romania

16. ENGLISH

1st Prize: **Bogdan Cuna**, *The Art of Being a Good Procrastinator*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Horia Botiș**, *The Secret Lives of the Brain. A review of David M. Eagleman's Incognito*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

3rd Prize: **Andrei Călınoaia**, *The Dialectics of Certainty and Uncertainty in the Encounter with the Radically Other in Hamlet and Macbeth*, University of Bucharest, Romania

Special Prize: **Denissa Pilipautanu**, *Bitcoin – the Middleman between an Emerging Technology and Social Empowerment*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Bogdan-Cătălin Drașcaba**, *The Oriental Pillar of Mathematics*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Paul Anghel, Samuel Gheorghe**, *Big Brother and Big Tech: Is There Any Privacy Left?*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Adrian Andrei Bernea**, *The Legacy of a Nation: Hernan Cortes – The Spanish Conquistador*, „Nicolae Balcescu” Land Force Academy of Sibiu, Romania

17. FRENCH

1st Prize: **Bianca Ardeleanu**, *Odyssey through Time and Space*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Karolina Gontarczyk**, *Multilingualism*, University of Warsaw, Poland



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18. INTERCULTURAL COMMUNICATION

1st Prize: **Marius Drăghiceanu**, *The Evolution of Communication*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

2nd Prize: **Alexandru Juravle, Robert-Gigi Albu**, *A Philosophy of Evil*, „Mircea cel Batrân” Naval Academy, Constanța, Romania

3rd Prize: **Mészáros István**, *Battlefield Communications in the 1st World War*, National University of Public Service, Budapest, Hungary

Special Prize: **Mieszko Przemyslaw Krychniak¹⁾, Nathan Ricalio²⁾**, *Language and Cultural Group Identity*, ¹⁾Military University of Technology in Warsaw, Poland and ²⁾IUT „Paul Sabatier”, Toulouse, France

Special Prize: **Răzvan Ilie**, *The Importance of Intercultural Exchange and Communication in NATO Peacekeeping Missions*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

19. PROFESSIONAL AND INTERCULTURAL DEVELOPMENT THROUGH ERASMUS+ MOBILITIES

1st Prize: **Andreea Alexandra Mitrofan**, *Professional and Intercultural Development Through Erasmus+ Mobilities*, University of Economic Studies, Bucharest

2nd Prize: **Patrycja Wojda**, *Impact of Participation in ERASMUS+ Programme on the Development of Students' Professional Competences*, Military University of Technology in Warsaw, Poland

3rd Prize: **Andrei-Tiberius Comandașu**, *Language Barriers in Erasmus Mobilities*, Military Technical Academy "Ferdinand I" of Bucharest, Romania

Special Prize: **Rebeca-Elena Ionescu, Adelin-Florin Poenaru**, *The Importance of Erasmus Mobility for the Higher Education Military System. Comparative Study*, „Henri Coandă” Air Force Academy, Brașov, Romania

**Military Technical Academy "Ferdinand I" of Bucharest
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