

Raport de cercetare

Centrul de Cercetare SISTEME INTELIGENTE

Perioada ianuarie-decembrie 2017

a) Articole stiintifice

-ISI

1. Jagatheesan, K.; Anand, B.; Samanta, Sourav; Dey, Nilanjan; Santhi, V.; Ashour, Amira S.; Balas, Valentina E., [Application of flower pollination algorithm in load frequency control of multi-area interconnected power system with nonlinearity](#), [NEURAL COMPUTING & APPLICATIONS](#) Volume: 28 Supplement: 1 Pages: S475-S488 Published: DEC 2017, **Q2, IF=2,505**
2. Kumar, Ram; Rajan, Abhishek; Talukdar, Fazal A.; Dey, Nilanjan; Santhi, V.; Balas, Valentina E., [Optimization of 5.5-GHz CMOS LNA parameters using firefly algorithm](#), [NEURAL COMPUTING & APPLICATIONS](#) Volume: 28 Issue: 12 Pages: 3765-3779 Published: DEC 2017, **Q2, IF=2,505**
3. Dey, Barnali; Hossain, Ashraf; Balas, Valentina. E.; Bera, R. N., [Improved Energy Detector for Spectrum Sensing Using Neuro-Fuzzy Double Threshold Technique](#), [STUDIES IN INFORMATICS AND CONTROL](#) Volume: 26 Issue: 3 Pages: 335-342 Published: SEP 2017, **Q3, IF=0,776**
4. Chatterjee, Sankhadeep; Sarkar, Sarbartha; Hore, Sirshendu; Dey, Nilanjan; Ashour, Amira S.; Balas, Valentina E., [Particle swarm optimization trained neural network for structural failure prediction of multistoried RC buildings](#), [NEURAL COMPUTING & APPLICATIONS](#) Volume: 28 Issue: 8 Pages: 2005-2016 Published: AUG 2017, **Q2, IF=2,505**
5. Li, Zairan; Dey, Nilanjan; Ashour, Amira S.; Cao, Luying; Wang, Yu; Wang, Dan; McCauley, Pamela; Balas, Valentina E.; Shi, Kai; Shi, Fuqian, [Convolutional Neural Network Based Clustering and Manifold Learning Method for Diabetic Plantar Pressure Imaging Dataset](#), [JOURNAL OF MEDICAL IMAGING AND HEALTH INFORMATICS](#) Volume: 7 Issue: 3 Pages: 639-652 Published: JUN 2017, **Q3, IF=0,621**
6. Beagum, Samsad; Dey, Nilanjan; Ashour, Amira S.; Sifaki-Pistolla, Dimitra; Balas, Valentina E., [Nonparametric de-noising filter optimization using structure-based microscopic image classification](#), [MICROSCOPY RESEARCH AND TECHNIQUE](#) Volume: 80 Issue: 4 Pages: 419-429 Published: APR 2017, **Q3, IF=1,147**

7. Wang, Dan; Li, Zairan; Cao, Luying; Balas, Valentina E.; Dey, Nilanjan; Ashour, Amira S.; McCauley, Pamela; Dimitra, Sifaki-Pistolla; Shi, Fuqian, [Image Fusion Incorporating Parameter Estimation Optimized Gaussian Mixture Model and Fuzzy Weighted Evaluation System: A Case Study in Time-Series Plantar Pressure Data Set](#), *IEEE SENSORS JOURNAL* Volume: 17 Issue: 5 Pages: 1407-1420 Published: MAR 1 2017, **Q1, IF=2,512**
8. Li, Zairan; Shi, Kai; Dey, Nilanjan; Ashour, Amira S.; Wang, Dan; Balas, Valentina E.; McCauley, Pamela; Shi, Fuqian, [Rule-based back propagation neural networks for various precision rough set presented KANSEI knowledge prediction: a case study on shoe product form features extraction](#), *NEURAL COMPUTING & APPLICATIONS* Volume: 28 Issue: 3 Pages: 613-630 Published: MAR 2017, **Q2, IF=2,505**
9. Balasubramaniyan, Sreram; Srinivasan, Seshadhri; Kebraei, Hamed; Subathra, B.; Balas, Valentina Emilia; Glielmo, Luigi, [Stochastic optimal controller design for medium access constrained networked control systems with unknown dynamics](#), *INTELLIGENT DECISION TECHNOLOGIES-NETHERLANDS* Volume: 11 Issue: 3 Pages: 253-264 Published: 2017, **Q3, IF=0**
10. Lin, Y. C.; Lin, T. C.; Peng, C. K.; Balas, V. E., [An optimal vibration control strategy for robust active suspension systems design with actuator delays and uncertainties](#), *INTELLIGENT DECISION TECHNOLOGIES-NETHERLANDS* Volume: 11 Issue: 3 Pages: 345-356 Published: 2017, **Q3, IF=0**
11. Shah-Mansouri, Vahid; Srinivasan, Seshadhri; Balas, Valentina E., [Optimal Access Class Barring in Machine to Machine Systems with Random Activation Time](#), *INFORMATICA* Volume: 28 Issue: 2 Pages: 285-302 Published: 2017, **Q2, IF=1,056**
12. Jagatheesan, K.; Anand, B.; Dey, Nilanjan; Omar, M., Balas, Valentina E., [AGC of multi-area interconnected power systems by considering different cost functions and Ant Colony Optimization technique based PID controller](#), *INTELLIGENT DECISION TECHNOLOGIES-NETHERLANDS* Volume: 11 Issue: 1 Pages: 29-38 Published: 2017, **Q3, IF=0**
13. Kamal, S.; Dey, N.; Ashour, A. S.; Ripon, S.; Balas, V. E.; Kaysar, M. S., [FbMapping: AN AUTOMATED SYSTEM FOR MONITORING FACEBOOK DATA](#), *NEURAL NETWORK WORLD* Volume: 27 Issue: 1 Special Issue: SI Pages: 27-57 Published: 2017, **Q3, IF=0,394**
14. Ahmed, Sk. Saddam; Dey, Nilanjan; Ashour, Amira S.; Sifaki-Pistolla, Dimitra; Balas-Timar, Dana; Balas, Valentina E.; Tavares, Joao Manuel R. S., [Effect of fuzzy partitioning in Crohn's disease classification: a neuro-fuzzy-based approach](#), *MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING* Volume: 55 Issue: 1 Pages: 101-115 Published: JAN 2017, **Q1, IF=1,916**
15. Umar Farooq, Jason Gu, Mohamed E. El-Hawary, Valentina E. Balas, Muhammad Usman Asad, Ghulam Abbas, *Fuzzy Model-based Design of a Transparent Controller for a Time*

Delayed Bilateral Teleoperation System Through State Convergence, Acta Polytechnica Hungarica, ISSN: 1785-8860, Vol. 14, No. 8, 2017, pag. 7-26, **Q3, IF=0,645**

16. Bozorgi, Seyed Mostafa ;Rostami, Ali Shokouhi ; Hosseinabadi, Ali Asghar Rahmani, Balas, Valentina Emilia, *A new clustering protocol for energy harvesting-wireless sensor networks*, COMPUTERS & ELECTRICAL ENGINEERING, Volume: 64, Pages: 233-247, Published: NOV 2017 , **Q3, IF=1,57**

-ISI Proceedings

1. Kaliannan, Jagatheesan; Anand, B.; Nguyen Gia Nhu; Dey, Nilanjan; Ashour, Amira S.; Balas, Valentina E., [Automatic Generation Control of Hydro-Hydro Interconnected Power System Based on Ant Colony Optimization](#) , Book Author(s): Patnaik, S, RECENT DEVELOPMENTS IN INTELLIGENT NATURE-INSPIRED COMPUTING Book Series: Advances in Computational Intelligence and Robotics (ACIR) Book Series Pages: 153-170 Published: 2017

2. Hosseinabadi, Ali Asghar Rahmani; Alavipour, Fataneh; Shamsheirbnd, Shahaboddin; Balas, Valentina E., [A Novel Meta-Heuristic Combinatory Method for Solving Capacitated Vehicle Location-Routing Problem with Hard Time Windows](#), Edited by: Balas, VE; Jain, LC; Zhao, X, Conference: International Conference on Information Technology and Intelligent Transportation Systems (ITITS) Location: Xian, PEOPLES R CHINA Date: DEC 12-13, 2015 Sponsor(s): Shaanxi Comp Soc; Changan Univ; Xian Univ Technol; CAS, NW Poly Tech Univ; Shaanxi Sirui Ind Co Ltd, INFORMATION TECHNOLOGY AND INTELLIGENT TRANSPORTATION SYSTEMS, VOL 1 Book Series: Advances in Intelligent Systems and Computing Volume: 454 Pages: 707-728 Published: 2017

3. Ali, Rekik; Mounir, Gabsi; Balas, Valentina Emilia; Nissen, Masmoudi, [Fuzzy Evaluation Method for Project Profitability](#) , Edited by: Shakhovska, N, Conference: 13th International Scientific and Technical Conference Computer Sciences and Information Technologies (CSIT) Location: Lviv, UKRAINE Date: SEP 06-10, 2016 , Sponsor(s): IEEE Advancing Technol Human; IEEE Ukraine Sect; IEEE; IEEE W Ukraine AP ED MTT CPMT SSC Soc Joint Chapter; LITTERIS & ARTIBVS; Lviv Polytechn Natl Univ; Inst Comp Sci & Informat Technologies; Minist Educ & Sci Ukraine, ADVANCES IN INTELLIGENT SYSTEMS AND COMPUTING, CSIT 2016 Book Series: Advances in Intelligent Systems and Computing Volume: 512 Pages: 17-27 Published: 2017

-BDI

1. Valeriu Beiu, Noemi Clara Rohatinovici, Leonard Daus, Valentina Emilia Balas, *Transport reliability on axonal cytoskeleton*, 14th International Conference on Engineering of Modern Electric Systems (EMES), 1-2 June 2017, Oradea, Romania, pag. 160-163.
2. Sankhadeep Chatterjee, Simona Dzitac, Soumya Sen, Noemi Clara Rohatinovici, Nilanjan Dey, Amira Ashour, Valentina Emilia Balas, *Hybrid modified Cuckoo Search-Neural Network in chronic kidney disease classification*, 14th International Conference on Engineering of Modern Electric Systems (EMES), 1-2 June 2017, Oradea, Romania, pag. 164-167.
3. Tsung-Chih Lin, Yi-Jie Huang, Josephine I-Ju Lin, E. Balas Valentina and Seshadhri Srinivasan, *Genetic Algorithm-Based Interval Type-2 Fuzzy Model Identification for People with Type-1 Diabetes*, FUZZ-IEEE 2017, Neaple, Italy
4. Houssen Milad, Umar Farooq, Mohamed E. El-Hawary, Valentina E. Balas, Muhammad Asad, *Fuzzy Logic Based Parameter Adjustment Model for Adaptive Decayed Brain Emotional Learning Network with Application to Online Time Series Prediction*, 2017 IEEE Electrical Power and Energy Conference (EPEC), Saskatoon, Saskatchewan, Canada from October 22-25, 2017, pag. 647-652.
5. Mohammad Pourm Mahmood Aghababa, Narges Zamani Moghadam, Valentina Emilia Balas, *Nonlinear Fault Tolerant Control Design for Multimachine Power Systems*, 21st International Conference on System Theory, Control and Computing, October 19-21, 2017, Sinaia, Romania, pag. 517-522.
6. Mohit Mittal and Valentina E. Balas, *A Novel Approach for Energy Aware Sensor Routing Protocol based on ART-2 Neural Network (EAS-ART)*, 5th International Conference on Electrical, Electronics and Information Engineering (ICEEIE 2017), Malang, Jawa Timur, Indonesia, from October 6 to 8, 2017.
7. K. Jagatheesan; B. Anand; Sourav Samanta; Nilanjan Dey; Amira S. Ashour; Valentina E. Balas, *Particle swarm optimisation-based parameters optimisation of PID controller for load frequency control of multi-area reheat thermal power systems*, Int. J. Advanced Intelligence Paradigms, ISSN 1755-0394, Vol. 9, Nos. 5/6, 2017, pag. 464-489, <http://www.inderscience.com/link.php?id=88143>
8. V. Yegnanarayanan; A. Renuka Lakshmi; Valentina E. Balas, *On domination and total domination number of a collaboration graph*, Int. J. Advanced Intelligence Paradigms, ISSN 1755-0394, Vol. 9, Nos. 5/6, 2017, pag. 541-557, <http://www.inderscience.com/link.php?id=88148>

-alte tipuri de publicatii

1. Boubaker, Olfa; Balas, Valentina E.; Benzaouia, Abdellah; Chaabane, Mohamed; Mahmoud, Magdi S.; Zhu, Quanmin, [Time-Delay Systems: Modeling, Analysis, Estimation, Control, and Synchronization](#), [MATHEMATICAL PROBLEMS IN ENGINEERING](#) Pages: 1-3 Published: 2017, Editorial (ISI)

2. Balas, Valentina E. [Automatic Control of the Traffic Flow](#), Edited by: Balas, VE; Jain, LC; Zhao, X,
Conference: International Conference on Information Technology and Intelligent Transportation Systems (ITITS) Location: Xian, PEOPLES R CHINA Date: DEC 12-13, 2015
Sponsor(s): Shaanxi Comp Soc; Changan Univ; Xian Univ Technol; CAS, NW Poly Tech Univ; Shaanxi Sirui Ind Co Ltd, INFORMATION TECHNOLOGY AND INTELLIGENT TRANSPORTATION SYSTEMS, VOL 1 Book Series: Advances in Intelligent Systems and Computing Volume: 454 Pages: 21-22 Published: 2017, Abstract (ISI)

b) Comunicari cu rezumate publicate la conferinte/simpozioane stiintifice:

- Internationale

1. **Keynote Speaker** la Second International Congress mHealth SIM-2017, 22-24 February, Shiraz, Iran, <http://mhealth.sums.ac.ir/en/>
2. **Keynote Speaker** la International Conference on Data Management, Analytics & Innovation, 24 - 26 February 2017, Pune, India, http://www.icdmai.com/Keynote_Speakers.htm
3. **Keynote Speaker** la The 2017 **First International Conference on Advanced Computational and Communication Paradigms (ICACCP)**, at **Sikkim Manipal Institute of Technology (SMIT)**, Majitar, Rangpo, East Sikkim, Sikkim 737136, 08-10 September 2017, din tematica generala a proiectului, insistand pe retelele Hammak si fiabilitatea acestora.
The conference was technically co-sponsored by **IEEE Kolkata Section** and **IEEE Computational Intelligence Society, Kolkata Chapter**. **IEEE Conference Record # 42882**
<http://www.icaccpa.in/keynote-speakers>
<http://icaccpa.in/sites/default/files/docs/Final%20Programs%20Schedule%20%20%28ICACCP-2017%29.pdf>
4. **Keynote Speaker** la 3rd International Conference on "Next Generation Computing Technologies", (NGCT-2017), "Smart Innovative Trends for Next Generation Computing, During 30th and 31st October, 2017, AT School of Computer Science & Engineering, University of Petroleum & Energy Studies Bidholi Campus, Via- Prem Nagar, Dehradun, Uttarakhand (INDIA) - 248 007
<http://www.ngct2017.in/keynote-Speakers>
<http://www.ngct2017.in/schedule>
5. **Kenote Speaker** to 2017 International Conference on Security with Intelligent Computing and Big-data Services, December 15-17, 2017, National Dong Hwa

University, Hualien, TAIWAN.

<http://sicbs17.ndhu.edu.tw/files/40-1192-4355.php?Lang=zh-tw>

6. **Key Note Speaker** la The International Conference on Computing and Related Technologies, 28 December, 2017, Karachi, Pakistan, <http://icrt.smiu.edu.pk/>

- **ISI Proceedings**

- **Nationale**

- **Studentesti**

1. In perioada 19-21 Octombrie 2017, Studenta doctoranda **Noemi Clara Rohatinovici** a participat la Simpozionul International “Brainstorming in Agora Cercurilor Studentesti” BACStud 2017 , Editia a III-a, care s-a desfasurat la Universitatea Agora din municipiul Oradea unde a sustinut o lucrare care prezinta o aplicatie a sistemelor de tip hamac studiate in cadrul temei de cercetare doctorala, obtinand o Diploma de participare si o Diploma cu Premiul I, <http://univagora.ro/ro/conferinte/bacstud2017/>
2. **Noemi Clara Rohatinovici** - Participarea la Scoala de Vara de la Cazanele Dunarii organizata de Universitatea din Oradea si Universitatea Eftimie Murgu din Resita si prezentarea unei lucrari in domeniul proiectului: *Studiul si dezvoltarea de cod Matlab si simulare pentru retele hexagonale 3D si compararea conectivitatii.*
3. **Balas Marius**, 3rd Edition of International Student Symposium BACStud 2017 to AGORA University in Oradea 19-21 October, a prezentat lucrarea: *Energii regenerabile: Serele inchise si pasive*

- **Alte tipuri de comunicari**

In perioada 14-16 Noiembrie studenta doctoranda **Noemi Clara Rohatinovici** a sustinut prezentari pe tematica proiectului in cadrul saptamanii “Scoala altfel” de la Liceul Tehnologic de Electronica si Automatizari „Caius Iacob” Arad, la Clasa a XII-a – *Sisteme complexe de inspiratie biologica.*

c) Brevete de inventie, inovatie:

- Internationale
- Nationale

d) Carte/Capitol de carte publicate sau trimise spre publicare in edituri:

- Internationale

1. Rejeeb Dey, Goshaidas Ray, **Valentina Emilia Balas**, Stability and Stabilization of Linear and Fuzzy Time-Delay Systems, A Linear Matrix Inequality Approach, Springer, 2018, ISBN 978-3-319-70147-9, 308 pag. <http://www.springer.com/gp/book/9783319701479>
2. Jagatheesan Kaliannan, Anand B, Nguyen Gia Nhu, Nilanjan Dey, Amira S. Ashour and **Valentina E. Balas**, *Automatic Generation Control of Hydro-Hydro Interconnected Power System Based on Ant Colony Optimization*, Recent Developments in Intelligent Nature-Inspired Computing, Editor **Srikanta Patnaik**, IGI Global, pag 153-170, 2017, <http://www.igi-global.com/book/recent-developments-intelligent-nature-inspired/173681>
3. **Valentina Emilia Balas**, Lakhmi C. Jain, Xiangmo Zhao, Fuqian Shi (**editori**), Information Technology and Intelligent Transportation Systems : Proceedings of the 2nd International Conference on Information Technology and Intelligent Transportation Systems (ITITS 2017), Xi'an, China, June 10, 2017, Springer 2017, ISBN 9781614997849, <https://www.bookdepository.com/Information-Technology-and-Intelligent-Transportation-Systems/9781614997849?status=invalid-email>
4. Jude Hemanth and **Valentina Emilia Balas**, (**editori**), Biologically Rationalized Computing Techniques For Image Processing Applications, Springer 2018, ISBN 978-3-319-61316-1, <http://www.springer.com/in/book/9783319613154>
5. **Valentina Emilia Balas**, Lakhmi C. Jain, Zhao, X., (**editori**), *Information Technology and Intelligent Transportation Systems, Proceedings of the 2015 International Conference on Information Technology and Intelligent Transportation Systems (ITITS 2015)*, Springer 2017, Vol. 1 si Vol. 2, ISBN 978-3-319-38789-5, ISBN 978-3-319-38771-0, <http://www.springer.com/in/book/9783319387697> , <http://www.springer.com/in/book/9783319387871>
6. Amlan Chakrabarti, Neha Sharma, **Valentina Emilia Balas** (**editori**), Advances in Computing Applications, Springer 2017, ISBN: 978-981-10-2629-4, <http://www.springer.com/la/book/9789811026294>
7. Pijush Samui, Sanjiban Sekhar Roy, **Valentina Emilia Balas** (**editori**), Handbook of Neural Computation, Elsevier 2017, ISBN: 9780128113189, <https://www.elsevier.com/books/handbook-of-neural-computation/samui/978-0-12-811318-9>
8. **Valentina Emilia Balas**, Lakhmi C. Jain, Marius Mircea Balas (**editori**), Soft Computing Applications : Proceedings of the 7th International Workshop Soft Computing Applications (SOFA 2016), Vol. 1 + Vol. 2, Springer 2017, ISBN: 9783319625201
ISBN: 9783319625232
<http://www.springer.com/gp/book/9783319625201>
<http://www.springer.com/gp/book/9783319625232>

- Nationale
- Alte tipuri de publicatii

e) Aplicatii de proiecte de cercetare/Proiecte de cercetare in derulare castigate in competitii internationale/nationale

1. Contract de cercetare stiintifica nr. 9542/22.12.2017 cu agenti economici – SC CONTACT PLUS SRL, obtinut prin competitie nationala: **Modelarea, simularea, experimentarea si validarea unor metode avansate de soft computing in domeniul controlului cladirilor inteligente.**

Valoare: 40.000 lei,

Director: Valentina E. Balas, Director Stiintific: Marius M. Balas, Membri: Ramona Lile, Noemi Rohatinovici, Student masterand: Oliver Oros, Studenti: Daniel Alexuta, Liviu Olaru.

2. BioCel Nano Art – membru in Proiect (Director Prof. Valeriu Beiu)