

## Lista de lucrari

### Candidat CSII FIRA CĂTĂLINA MONICA

#### Cărți și capitole în cărți de specialitate

|                               |   |
|-------------------------------|---|
| A1.1.1 Edituri internationale |   |
| 1                             | A. Brezulianu, I. Ciocoiu, M. Fira, Chapter 10 "Electrocardiographic Signal Processing Applications in Telemedicine", in book "Handbook of Research on Developments in e-Health and Telemedicine: Technological and Social Perspectives", edited by M. Manuela Cunha, António Tavares and Ricardo Simões, Medical Information Science Reference Publisher, ISBN: 978-1-61520-670-4, December 2009 |
| A1.1.2 Edituri nationale      |   |
| 1                             | A. Brezulianu, M. Fira, "Procesarea semnalelor biomedicale si aplicatii", Editura Politehniuum, Iasi, septembrie 2010, ISBN: 978-973-621-308-3  |
| 2                             | A. M. Lazar, L. Davea, M. Fira, A. Maiorescu, B. Teodorescuy, R. Urseleanu, "Interfata creier - calculator; Implementarea paradigmelor", Ed. Cermi, 2009, ISBN: 978-973-667-384-9   |

#### Articole în reviste cotate și în volumele unor manifestări științifice indexate ISI proceedings

|   |   |
|---|---|
| 1 | M. Fira, H-N. Costin, L. Goras, A Study on Dictionary Selection in Compressive Sensing for ECG Signals Compression and Classification, BIOSENSORS-BASEL, Volume12, Issue3, Article Number 146, <a href="https://doi.org/10.3390/bios12030146">https://doi.org/10.3390/bios12030146</a> , 2022, eISSN 2079-6374, WOS:000776067500001 ( <b>Impact factor = 5.52 revista Q1 = zona rosie</b> ) |
| 2 | M. Fira, H-N. Costin, L. Goras, On the Classification of ECG and EEG Signals with Various Degrees of Dimensionality Reduction, BIOSENSORS-BASEL, Volume11, Issue5, Article Number161, DOI10.3390/bios11050161, 2021, eISSN 2079-6374, WOS:000653578000001 ( <b>Impact factor = 5.52 revista Q1 = zona rosie</b> )   |
| 3 | M. Fira, L. Goras, "An ECG Signals Compression Method and Its Validation Using NNs", IEEE Transactions on Biomedical Engineering, Vol. 55, No. 4, 1319 – 1326, April 2008, ISSN 0018-9294, WOS:000254219900006 ( <b>Impact factor 2020 = 4.5 revista Q2 = zona galbena</b> )  |
| 4 | Fira, M., Goras, L., "A New Method for EEG Compressive Sensing" Advances in Electrical and Computer Engineering, vol. 12, no. 4, pp. 71-76, 2012, ISSN 1582-7445, WOS:000312128400011 ( <b>Impact factor 2020 = 1.22</b> )  |
| 5 | M. Fira, L. Goraș, C. Barabasa, N. Cleju, "On ECG Compressed Sensing using Specific Overcomplete Dictionaries", Advances in Electrical and Computer Engineering, Vol. 10, Nr. 4, 2010, pp. 23- 28, ISSN 1582-7445, WOS:000284782700004 ( <b>Impact factor 2020 = 1.22</b> )   |

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| 6  | M. Fira, L. Goras, On the Classification of ECG Signals Subject to Various Degrees of Dimensionality Reduction, International Conference on e-Health and Bioengineering, EHB 2020, Iasi, ISBN 978-1-7281-8803-4, WOS:000646194100117  |
| 7  | M. Fira, L. Goras, ECG and EEG Pattern Classifications and Dimensionality Reduction with Laplacian Eigenmaps, International Journal of Advanced Computer Science and Applications (IJACSA), Volume11, Issue3, Page 42-48, 2020 (revista indexata ISI - Thomson Reuters), ISSN 2158-107X, WOS:000524029200006  |
| 8  | M. Fira, L. Goras, On Some Methods for Dimensionality Reduction of ECG Signals, International Journal of Advanced Computer Science and Applications (IJACSA), Volume 10, Issue 9, Page 326-331, 2019 (revista indexata ISI - Thomson Reuters), ISSN 2158-107X, WOS:000524029200006  |
| 9  | M. Fira, L. Goras, Dimensionality Reduction for ECG Signals; Laplacian Eigenmaps and Locality Preserving Projections, International Symposium on Signals, Circuits and Systems (ISSCS), 2019, Iasi, Romania (indexata IEEE Xplore si Thomson Reuters), ISBN 978-1-7281-3896-1, WOS:000503459500079  |
| 10 | M. Fira, L. Goras, A. Lazar, On P300 Detection using Scalar Products, International Journal of Advanced Computer Science and Applications (IJACSA), Volume 9, Issue 1, Page 99-104, 2018 (revista indexata ISI - Thomson Reuters), ISSN 2158-107X, WOS:000524029200006  |
| 11 | Monica Fira, Liviu Goras, On Compressed Sensing for EEG Signals - Validation with P300 Speller Paradigm, International Conference on Communications COMMS 2016, Bucharest, Romania, 9-11 iunie 2016, DOI: 10.1109/ICComm.2016.7528296 (indexata IEEE Xplore si Thomson Reuters), ISBN 978-1-4673-8197-0, WOS:000383221900088  |
| 12 | Monica Fira, Andrei Maiorescu, "P300 spelling and EEG compressed sensed based on a universal megadictionary", International Conference on Intelligent Software Methodologies, Tools and Techniques - SOMET 2016, Larnaca, Cipru, 12-14 septembrie 2016 (Volume 286: New Trends in Software Methodologies, Tools and Techniques, Series Frontiers in Artificial Intelligence and Applications, IOS press, DOI 10.3233/978-1-61499-674-3-203, pp: 203 - 212) (indexata DBLP), ISSN 0922-6389, WOS:000383373300017 |
| 13 | Monica Fira, Compressed Sensing of Multi-Channel EEG Signals: quantitative and qualitative evaluation with Speller Paradigm, International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 7, No. 6, 2016 (revista indexata ISI - Thomson Reuters), ISSN 2158-107X, WOS:000524029200006  |
| 14 | Monica Fira, Liviu Goras, Comparison of inter-and intra-subject variability of P300 spelling dictionary in EEG compressed sensing, International Journal of Advanced Computer Science and Applications (IJACSA), Vol. 7, No. 10, 2016 (revista indexata ISI - Thomson Reuters), ISSN 2158-107X, WOS:000524029200006   |
| 15 | Monica Fira, Liviu Goraș, A New Method for ECG Compression Evaluation, Proceedings of International Symposium on Signals, Circuits and Systems ISSCS 2015 (CDROM), 9-10 July, Iasi, Romania (indexata IEEE Xplore si Thomson Reuters), WOS:000380451600004, ISBN 978-1-4673-7488-0  |

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|----|---|
| 16 | Fira Monica, Applications of Compressed Sensing: Compression and Encryption, International Conference on e-Health and Bioengineering, EHB 2015, 19-21 Noiembrie, Iasi, Romania, (indexata <i>IEEE Xplore</i> si Thomson Reuters), WOS: 000380397900158, ISBN 978-1-4673-7545-0  |
| 17 | M. Fira, R. Aldea, A.Lazar, L. Goras, Classifications of Motor Imagery Tasks in Brain Computer Interface Using Euclidean Distance, 12th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2014, 25 – 27 Noiembrie 2014, Belgrad, (indexata <i>IEEE Xplore</i> si Thomson Reuters), WOS:000380554900026, ISBN 978-1-4799-5888-7                     |
| 18 | M. Fira, L. Goras, On projection matrices and dictionaries in ECG compressive sensing - a comparative study, 12th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2014, 25 – 27 Noiembrie 2014, Belgrad, (indexata <i>IEEE Xplore</i> si Thomson Reuters), WOS:000380554900002, ISBN 978-1-4799-5888-7   |
| 19 | R. Aldea, M. Fira, A. Lazăr, Classifications of Motor Imagery Tasks Using K-Nearest Neighbors, 12th Symposium on Neural Network Applications in Electrical Engineering, NEUREL 2014, 25 – 27 Noiembrie 2014, Belgrad, (indexata <i>IEEE Xplore</i> si Thomson Reuters), WOS:000380554900025, ISBN 978-1-4799-5888-7   |
| 20 | M. Fira, L. Goras, C. Barabasa, Reconstruction of Compressed Sensed ECG Signals Using Patient Specific Dictionaries, International Symposium on Signals, Circuits and Systems- ISSCS 2013, Iasi, Romania (indexata <i>IEEE Xplore</i> si Thomson Reuters), WOS:000337926700079, ISBN 978-1-4673-6141-5  |
| 21 | M. Fira, L. Goras, N. Cleju, C. Barabasa, „Results on ECG Compressed Sensing using Specific Dictionaries and its Validation”, International Conference on Information Technology Interfaces – ITI 2012, 25 – 28 Iunie 2012, Dubrovnik, Croatia, pp. 423-428, ISBN: 978-953-7138-24-0, ISSN: 1330-1012 (indexata <i>IEEE Xplore</i> si Thomson Reuters), WOS:000312658700068 |
| 22 | M. Fira, L. Goras, C. Barabasa, N. Cleju, „ECG compressed sensing based on classification in compressed space and specified dictionaries”, EUSIPCO 2011 (The 2011 European Signal Processing Conference), 29 august – 2 septembrie 2011, Barcelona, Spania, pp 1573-1577,(indexata EURASIP), WOS:000377963100319, ISSN 2076-1465  |
| 23 | M. Fira, Detection of P300 in a BCI Speller, “Communications in Computer and Information Science”, Convergence and Hybrid Information Technology, Volume 206 / 2011, Part 7, pag. 481-487, Springer-Verlag Berlin Heidelberg 2011, pp 481-487, WOS:000310258400062, ISBN 978-3-642-24105-5  |
| 24 | M. Fira, L. Goras, N. Cleju, C. Barabasa „On the classification of compressed sensed signals”, ISSCS 2011 (The 10-th International Symposium on Signals, Circuits and Systems), 30 Iunie – 1 Iulie 2011, Iasi, pp 503-507, ISBN: 978-1-4577-0201-3 (indexata <i>IEEE Xplore</i> ), WOS:000337925400125, ISBN 978-1-4577-0201-3  |
| 25 | M. Fira, L. Goras „Basis Pursuit for ECG Compression”, International Symposium on Signal, Circuits and Systems, ISSCS 2009, Iasi, Romania, pp. 25 -28, , 9–10 July 2009; (indexata <i>IEEE Xplore</i> ), WOS:000275854200006 ISBN 978-1-4244-3784-9   |

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| 26 | M. Negoita (Fira), Liviu Goras, "A New Compression Algorithm for ECG Signals", EUROCON 2005- The International Conference on Computer as a tool, Belgrad, 2005, WOS:000237248900103, ISBN 1-4244-0049-X   |
| 27 | L. Slabu, M. Negoita (Fira), A. Sandu, C. Cosduneanu, L. Amariei, I. Grosu, "Investigations of Cardiac Rhythm Fluctuation Using the DFA Method", CD proceedings of the 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 25-28 Octombrie 2001, Istambul (indexata IEEE Xplore), WOS:000178871900154, ISBN 0-7803-7211-5 |

**Articole în reviste, și în volumele unor manifestări științifice indexate în alte baze de date internațional (BDI)**

|   |  |
|---|--|
| 1 | M. Fira, L.Goras, On the influence of feature selection with Laplacian Score in ECG signals classification, International Symposium on Signals, Circuits and Systems (ISSCS), 2021,Iasi, Romania (indexata IEEE Xplore)  |
| 2 | M. Fira, L. Goras, Improving multiclass classification accuracy for ECG signals belonging to imbalanced databases, International Symposium on Signals, Circuits and Systems (ISSCS), 2021,Iasi, Romania (indexata IEEE Xplore)   |
| 3 | L. Goras, P. Ungureanu, M. Fira, On Pattern Formation in a Class of Graph Neural Networks, International Symposium on Signals, Circuits and Systems (ISSCS), 2021,Iasi, Romania (indexata IEEE Xplore)   |
| 4 | M. Fira, L. Goras, An Efficient Classifier for P300 in Brain-Computer Interface Based on Scalar Products, ISMAC 2018: Proceedings of the International Conference on ISMAC in Computational Vision and Bio-Engineering 2018 (ISMAC-CVB) pp 235-242, Lecture Notes in Computational Vision and Biomechanics book series (LNCVB, volume 30) (indexata link.springer) |
| 5 | Monica Fira, Liviu Goras, Victor-Andrei Maiorescu and Mihaela Catalina Luca, Compressed Sensing and Clasification of Cardiac Beats Using Patient Specific Dictionaries, International Conference of Information and Communication Technologies for Ageing Well and e-Health - ICT4AWE2016, Roma, Italia, 21-22 aprilie 2016 (indexata DBLP)                        |
| 6 | Adrian Brezilianu, Monica Fira, Marius Daniel Pestina, Compressed Sensing Based Encryption Approach for Tax Forms Data, International Journal of Advanced Research in Artificial Intelligence (IJARAI), Volume 4 Issue 11, 2015 (indexata Scopus)  |
| 7 | Oana-Diana Eva, Anca Mihaela Lazăr, Monica Fira, Normalized Itakura Distance for MU Rhythm, Buletinul Institutului Politehnic din Iași, Tomul LIX (LXIII), Fasc. 4, 2015, Secția, Electrotehnică, Energetică, Electronică, pp. 91- 101 (indexata Scopus)   |
| 8 | A. Brezilianu, M. Fira, L. Fira, „A genetic algorithm approach for scheduling of resources in well-services companies”, International Journal of Advanced Research in Artificial Intelligence, IJARAI, Vol. 1, No. 5, pp 1-6, 2012, 2012, pp 1-6, ISSN: 2165-4050 (indexata Scopus)  |
| 9 | N. Cleju, M. Fira, C. Barabasa, L. Goras, „Robust reconstruction of compressively sensed ECG patterns”, ISSCS 2011 (The 10-th International Symposium on Signals, Circuits and Systems), 30 Iunie – 1 Iulie 2011, Iasi, pp. 507-510, ISBN: 978-1-4577-0201-3 (indexata IEEE Xplore)  |

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| 10 | A. Brezilianu, M. Fira, L. Fira, "A genetic algorithm approach for a constrained employee scheduling problem as applied to employees at mall type shops", International Journal of Advanced Science and Technology, Vol. 14, January 2010, pag 53 - 64, ISSN: 2005-4238 (indexata Scopus)  |
| 11 | A. Brezilianu, M. Fira, „Integrated Information System of Monitoring and Management for Heart Centers”, International Journal of Advanced Research in Artificial Intelligence, IJARAI, Vol. 1, No. 5, pp 16 - 21, 2012, 2012, 16-21, ISSN: 2165-4050 (indexata Scopus)   |
| 12 | M. Fira, L. Goras, "Biomedical Signal Compression based on Basis Pursuit", International Journal of Advanced Science and Technology, Science and Engineering Research Support Center (SERSC), Vol. 14, pag. 1-14, January 2010, ISSN: 2005-4238 (indexata Scopus)  |
| 13 | A. Brezilianu, M. Fira, E. Gazzi, L. Sorodoc: „A Computerized Data Analysis Method for Electrogastrogaphyc Signals”, Revista Medico-Chirurgicala a societatii de medici si naturalisti din Iasi, volumul 113 (2009), numarul 1 , pp. 120, ISSN: 0048-7848, 2009 (indexata Scopus)  |
| 14 | M. Fira, L. Goras , "Biomedical Signal Compression based on Basis Pursuit", International Conference on Convergence and Hybrid Information Technology, ICHIT 2009, in Daejeon, Coreea de Sud; pag. 541-545, ISBN: 978-1-60558-662-5, 27 – 29 August 2009 (indexata ACM)  |
| 15 | A. Brezilianu, M. Fira, Lucian Fira, "A genetic algorithm approach for a constrained employee scheduling problem as applied to employees at mall type shops", International Conference on Convergence and Hybrid Information Technology, ICHIT 2009, in Daejeon, Coreea de Sud; pag. 497-501, ISBN : 978-1-60558-662-5, 27 – 29 August 2009 (indexata ACM) |
| 16 | L. Goras, M. Fira, „Preprocessing Method for Improving ECG Signal Classification and Compression Validation”, 4th International Scientific Conference on Physics and Control – PHYSCON 2009, Catania, Italia, Paper ID 262, Procceding IEEE, 1-4 Septembrie 2009 (indexata Scopus)   |
| 17 | M. Negoita (Fira), Liviu Goras, "On a Compression Algorithm for ECG Signals", 13th European Signal Processing Conference – EUSIPCO 2005, Antalya, Turcia, September 4-8, 2005, ISBN 975-00 (indexata EURASIP)  |

#### Granturi / proiecte de cercetare câștigate prin competiție (Director – Responsabil partener)

| Nr. crt.   | Titlul contractului   | Număr ani |
|--|---|-----------|
| <b>A2.4.1.2 Director/responsabil/aplicant grant național</b> |   |           |
| 1  | PNCDI II - RU – TinereEchipe 2014 - 4 - 0832- "Metode de prelucrare a semnalelor medicale bazate pe achizitia comprimata; aplicatii si imlementarea acestora", director de grant, 2015 - 2017 | 2         |
| 2  | PN II – RU – PostDoc cod 347 – “Posibilitati de procesare a semnalelor medicale bazate pe dictionare specifice”, director de grant, 2010 – 2012   | 2         |
| 3  | CNCSIS TD (Tineri Doctoranzi) – tema 73 si 98 /124 - 2005/2006 "Metode noi de compresie a semnalelor electrocardiografice cu aplicatii in telemedicina", director de grant, 2005 – 2006       | 2         |
| 4  | CNCSIS - 84 – BD (Bursa Doctorala) "Contribuții la prelucrarea semnalelor biomedicale", aplicant grant, 2003 – 2006   | 3         |
| 5  | ANSTI-B-B1 6171- 2 000/2001 "Cercetare privind optimizarea raportului performanță/cost pentru chirurgia laparoscopică", director of grant, 2000 – 2001  | 1         |

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**A2.4.2.2 Membru în echipă grant național**

|   |  |   |
|---|--|---|
| 1 | CNCSIS 12115/01.01.2008 PARTENERIATE - "BCISIS -Sistem de investigatie, asistare si control al afectiunilor neurologice bazat pe interfata creier - calculator", membru in echipa de implementare, Director de grant Anca Lazar , perioada 2008 – 2011       | 3 |
| 2 | PN II IDEI nr. 648/2009 - UEFISCDI - " Algoritmi si arhitecturi paralele pentru achizitia, compresia si prelucrarea semnalelor", Director de grant Liviu Goras, perioada 2009 – 2012   | 3 |
| 3 | PNCDI II - Cooperare Bilaterală - Capacitati - Modul III ANCS - "Analiza automata a semnalelor ECG pentru aplicatii de telemedicina", membru in echipa de implementare, Director de proiect Adrian Brezulianu, perioada 2009                                 | 1 |
| 4 | PN II IDEI nr. 626/2009 - UEFISCDI - "Sistem robotic inteligent cu autoorganizare si bio-inspirat", membru in echipa de implementare, Director de proiect Dan Marius Dobrea, Perioada 2010 - 2011  | 2 |
| 5 | Act ad. GR 33/2007, tema 11, cod CNCSIS 226 - "Cercetări privind utilizarea rețelelor neuronale celulare în aplicații de prelucrare liniară și neliniară a semnalelor", membru in echipa de implementare, Director de grant Liviu Goras, perioada 2007       | 1 |
| 6 | Act ad. GR 164/2006, tema 38, cod CNCSIS 513 - "Prelucrarea imaginilor folosind rețele neuronale celulare cu aplicații în extragerea de trăsături și recunoașterea formelor", membru in echipa de implementare, Director de grant Liviu Goras, perioada 2006 | 1 |

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