



**UNIVERSITATEA DE MEDICINĂ, FARMACIE, ȘTIINȚE ȘI TEHNOLOGIE
„GEORGE EMIL PALADE” DIN TÂRGU MUREȘ
FACULTATEA DE INGINERIE ȘI TEHNOLOGIA INFORMAȚIEI
DEPARTAMENTUL DE INGINERIE ELECTRICĂ ȘI TEHNOLOGIA INFORMAȚIEI
Domeniul: Informatică
lector dr. ing. LEFKOVITS Szidónia**

LISTA DE LUCRĂRI

1. Teza de doctorat

- Doctor în .Informatică – perioada: 2008-2012
- Facultatea de Matematică și Informatică; Universitatea Babeș-Bolyai Cluj-Napoca
- **Coordonator științific:** Prof. Univ. Dr. Horia Florin POP
- **Titlul tezei de doctorat:** Metode robuste de detecție ale obiectelor cu aplicații în detecția facială
- Susținută la: **.21.09.2012**
- **Confirmare:** OMEdC 6508/19.12.2012

2. Articole științifice publicate în reviste și conferințe de specialitate indexate ISI

2.1. Articole publicate în reviste indexate ISI Web of Science

- [1.] **Szidónia Lefkovits** “Improvements on Gabor Descriptor Retrieval for Patch Detection”, The Journal of Computing and Informatics, vol. 34 no.6, 1374-1396, 2015, **Factor de impact 0.524**
- [2.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida “An Optimized Segmentation Framework Applied to Glioma Delimitation”, Studies in Informatics and Control Vol. 26 Issue 2, pp. 203-212, 2017, **Factor de impact 1.02**
- [3.] László Szilágyi , **Szidónia Lefkovits**, Sándor M. Szilágyi “Self-tuning possibilistic c-means clustering models” International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, vol.17, no. 1, February 2020, ISSN: 0218-4885, 10.1142/S0218488519400014, **Factor de impact 1.286**



2.2. Articole publicate la conferințe indexate ISI Web of Knowledge

- [1.] **Szidónia Lefkovits**, László Szilágyi, László Lefkovits "Brain Tumor Segmentation and Survival Prediction Using a Cascade of Random Forests", in "Proceedings of the Medical Image Computing and Computer Assisted Intervention (MICCAI)" BRATS-Grand Challenge and Workshop, Granada, Spain, 16-20 September 2018, . Lecture Notes in Computer Science, vol 11384. Springer, Switzerland, pp. 334-345, under indexing in ISI, **CORE A**
- [2.] **Szidónia Lefkovits**, László Lefkovits, László Szilágyi : "Applications of Different CNN Architectures for Palm Vein Identification" 16th International Conference on Modeling Decisions for Artificial Intelligence, Milan, Italy, 4--7 September 2019, LNCS, volume 11676, pp. 295-306, , under indexing in ISI, **CORE B**
- [3.] **Szidónia Lefkovits**, László Lefkovits, "Comparison of Subspace Methods for Iris Identification" IEEE 17th World Symposium on Applied Machine Intelligence and Informatics, SAMI , Slovakia, 24-26 January, 2019 , pp. 305-310, under indexing in ISI, **CORE C**
- [4.] László Szilágyi, **Szidónia Lefkovits**, Zsolt Levente Kucsván "A Self-Tuning Possibilistic c-Means Clustering Algorithm" 15th International Conference on Modeling Decisions for Artificial Intelligence, Mallorca, Spain, 15-18 October 2018, pp. 255-266, , under indexing in ISI, **CORE B**
- [5.] Zoltán Kapás, László Lefkovits, David Icăzan, Ágnes Gyórfi, Barna Iantovics, **Szidónia Lefkovits**, Sándor M. Szilágyi, László Szilágyi "Automatic brain tumor segmentation in multispectral MRI volumes" Springer-Verlag in the Lecture-Notes-in-Computer-Science, The Pacific-Rim Symposium on Image and Video Technology (PSIVT), 20-24 November, 2017, **CORE B**
- [6.] László Lefkovits, **Szidónia Lefkovits**, Simina Emerich "Biometric Identification Based on Feature Fusion with PCA and SVM" The 10th International Conference on Machine Vision, 13-25 November 2017, Vienna, Austria, SPIE, ISI Thomson - CPCI-S, **CORE C**, **Best presentation award**
- [7.] **Szidónia Lefkovits**, László Lefkovits, Simina Emerich "Detecting the eye and its openness with Gabor filters", Digital Forensic and Security (ISDFS), 2017 5th International Symposium on, p. 1-5, 2017, IEEE, ISI Thomson - CPCI-S
- [8.] László Lefkovits, **Szidónia Lefkovits**, László Szilágyi "Brain Tumor Segmentation with Optimized Random Forest", in "Proceedings of the Medical Image Computing and Computer Assisted Intervention (MICCAI)" BRATS-Grand Challenge and Workshop, 17-21 October 2016, Athen, Greece, **CORE A**
- [9.] László Lefkovits, **Szidónia Lefkovits**, Simina Emerich, Mircea-Florin Vaida "Random Forest Feature Selection Approach for Image Segmentation" The 9th International Conference on Machine Vision, 18-20 November 2016, Nice, France, pp. 1034117-1034117-5, SPIE Vol. 10341 **CORE C**
- [10.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida, Simina Emerich, Raul Măluțan "Comparison of Classifiers for Brain Tumor Segmentation", in "5th



- International Conference on Advancements of Medicine and Health Care through Technology MediTec”, 12 - 15 October 2016, ISI Thomson - CPCI-S
- [11.] **Szidónia Lefkovits**, Laszlo Lefkovits “Gabor Feature Selection Based on Information Gain” International Conference on Interdisciplinarity in Engineering 6th-7th October 2016, Procedia Engineering 181, pp. 892-898, Elsevier, ISI Thomson - CPCI-S
- [12.] László Lefkovits, **Szidónia Lefkovits**, Petre Pop, Mircea-Florin Vaida. “Bias Field Inhomogeneity Measurements”. “IEEE - 2015 E-Health and Bioengineering Conference”, Iași, pp 1–4, 19-21 November 2015, ISI Thomson - CPCI-S
- [13.] **Szidónia Lefkovits**, Laszlo Lefkovits “Comparison of Boosted Gabor Feature based Local Descriptor” International Conference on Interdisciplinarity in Engineering 8th-9th October 2015, Procedia Technology, vol. 22, 2016, pp 913-921 ISI Thomson - CPCI-S
- [14.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida. “An Atlas Based Performance Evaluation of Inhomogeneity Correcting Effects”. “The 5th International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics, MACRO”, Tîrgu-Mureș, , pages 79–90, 6-7, March 2015, ISI Thomson - CPCI-S
- [15.] **Szidónia Lefkovits**, Laszlo Lefkovits “Distance Based k-NN Classification of Gabor Jet Local Descriptors” International Conference on Interdisciplinarity in Engineering 9th-10th October 2014, Procedia Technology, Vol. 19, 2015, pp.780-785 ISI Thomson - CPCI-S
- [16.] **Szidónia Lefkovits**, Laszlo Lefkovits “Enhanced Gabor Filter Based Facial Feature Detector” International Conference IETM-5, European Integration between Tradition and Modernity, Tîrgu-Mureș 24-25th of October 2013, Mathematics and Computer Science section, ISI Thomson - CPCI-S
- [17.] **Szidónia Lefkovits** “Numerical Computation Method of the General Distance Transform” International Conference Knowledge Engineering Principles and Techniques, Knowledge Processing and Discovery section – article, KEPT 2011, Universitatea “Babeș-Bolyai” Cluj-Napoca, ISI Thomson - CPCI-S
- [18.] **Szidónia Lefkovits** “Teaching Improvements on Haar-based Classifiers” International Conference IETM-3, European Integration Between Tradition and Modernity, Tîrgu-Mureș 22-23th of October 2009, Mathematics and Computer Science section , pp.1050-1060, ISI Thomson - CPCI-S
- [19.] **Szidónia Lefkovits** “Performance Analysis of Face Detection Systems Based on Haar Features” International Conference CANS’2008 Complexity and Intelligence of the Artificial and Natural Complex Systems Petru Maior University, Tîrgu-Mureș 8-9th of November 2008, Advanced Image Processing section – article, pp.184-192, ISI Thomson - CPCI-S

3. Articole științifice publicate în reviste și conferințe de specialitate indexate BDI

3.1. Articole publicate în reviste indexate BDI

- [1.] Spyridon Bakas, Mauricio Reyes, Andras Jakab, Stefan Bauer, et. int. **Szidónia Lefkovits**, et. al. “Identifying the Best Machine Learning Algorithms for Brain Tumor



- Segmentation, Progression Assessment, and Overall Survival Prediction in the BRATS Challenge”, arXiv:1811.02629v3
- [2.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida “Brain Tumor Segmentation Based on Random Forest. Memoirs of the Scientific Sections of the Romanian Academy” vol. XXXIX, pp. 83–93, 2016, BDI indexed
 - [3.] **Szidónia Lefkovits**, László Lefkovits “Performance Analysis of Eigenface Recognition under varying external conditions”, Scientific Bulletin of “Petru Maior” University” Tîrgu-Mureș, vol. 11 no. 2 pp. 40-49, 2014, BDI indexed
 - [4.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida “MRI Image Processing Methods” Acta Technica Napocensis, Electronics and Telecommunications, Vol. 55 Issue 4, pp:13-18, BDI indexed
 - [5.] **Szidónia Lefkovits** “Combining boosted global- and part-aspect face detectors” Scientific Bulletin of “Petru Maior” University” Tîrgu-Mureș, vol. 8 p:35-40, 2011, BDI indexed
 - [6.] **Szidónia Lefkovits** “Numerical Computation Method of the General Distance Transform” Studia Universitatis “Babes-Bolyai” - Series Informatica, vol 53(2). p:68-74, 2011, BDI indexed
 - [7.] **Szidónia Lefkovits** “Assessments of Building Classifiers for Face Detection”, International Conference On Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics MACRO, Tîrgu-Mureș 20-21th of March 2009, Computer Sciences section, pp 175-186, BDI indexed

3.2. Articole publicate în conferințe indexate BDI

- [1.] **Szidónia Lefkovits**, László Lefkovits, László Szilágyi “CNN Approaches for Dorsal Hand Vein Identification” 27th International Conference on Computer Graphics, Visualization and Computer Vision ISSN 2464–4617, Computer Science Research Notes CSRN 2902, pp. 51-60, May, 27 – 30, 2019, Notes, Pilsen, Czech Republic, **CORE B**
- [2.] **Szidónia Lefkovits**, Simina Emerich, László Szilágyi “Biometric System Based on Registration of Dorsal Hand Vein Configurations” Springer-Verlag in the Lecture-Notes-in-Computer-Science, volume 10799, Human Behaviour Analysis Workshop, The Pacific-Rim Symposium on Image and Video Technology (PSIVT), 20-24 November, 2017, **CORE B**
- [3.] **Szidónia Lefkovits** “Novel Gabor Filter-based Patch Descriptor”, IEEE 10th Jubilee International Symposium on Intelligent Systems and Informatics, Subotica, Serbia, 20-22th of September 2012, IEEE, **CORE C**
- [4.] László Lefkovits, **Szidónia Lefkovits** “Two-phase MRI brain tumor segmentation using Random Forests and Level Set Methods” 26th International Conference on Computer Graphics, Visualization and Computer Vision May 28-June 1, 2018, Computer Science Research Notes CSRN 2802, ISSN 2464-4617, pp. 152-159, May 28 – June 1, 2018, Pilsen, Czech Republic, **CORE B**
- [5.] **Szidónia Lefkovits**, Laszlo Lefkovits “Blob Detector Based Gabor Descriptor for Feature Extraction” International Conference EITM-6, European Integration Between Tradition and Modernity, Tîrgu-Mureș 22-23th of October 2015, Mathematics and Computer Science section, “Diacronia” bibliometric database (BDD)



- [6.] **Szidónia Lefkovits** “Hybrid Face Detector Based on Boosted Classifiers” 8th International Conference of PhD Students in Computer Science, Szeged, Hungary 28-30th of June 2012, **Best talk of the session award**
- [7.] László Lefkovits, Simina Emerich, Septimiu Crișan, **Szidónia Lefkovits** “Human Identification Using Multi-region PCA for Iris Recognition” Fifth International Conference on Advances in Computing, Communication and Information Technology - CCIT 2017, 2-3 September 2017, Zürich, Switzerland, pp. 123 – 127, ISBN 978-1-63248-131-3, theRED, **Best paper award**
- [8.] László Lefkovits, **Szidónia Lefkovits**, Simina Emerich “Dorsal Hand Vein Identification Based on Geometric and Local Features”. “The 6th International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics, MACRO”, Tîrgu-Mureș, pages 79–90, 27-28, October 2017
- [9.] László Lefkovits, **Szidónia Lefkovits** “Gaussian Refinement on Gabor filter based Patch Descriptor” International Conference on Applied Informatics Eger, Hungary, 29th January-1st February 2014

4. Participări la alte conferințe

- [1.] **Szidónia Lefkovits** “Hybrid Face Detector Based on Boosted Classifiers” 8th International Conference of PhD Students in Computer Science, Szeged, Hungary 28-30th of June 2012, Best talk of the session award
- [2.] **Szidónia Lefkovits** “Mixture of Classifiers for Object Detection” National Conference ZAC (Zilele Academice Clujene) 2nd of June, 2010, Programming Languages and methods section, p:5-10
- [3.] **Szidónia Lefkovits** “Metode de inteligență artificială cu aplicații în segmentarea imaginilor”, Medicina Viitorului – La interfața între medicină tehnologie și cost-eficiență, Zilele UMFST 2018
- [4.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida “Discriminative Model for Tumor Segmentation in Multimodal MRI”, “Anniversary Workshop Dedicated to the 150th Anniversary of the Romanian Academy, Iași”, 24 March 2016.
- [5.] László Lefkovits, **Szidónia Lefkovits**: “Mesterséges intelligencia, eszköz a diagnosztikában” (Inteligența artificială în diagnosticarea medicală), Conferința Digitális orvoslás (Medicină digitală)

5. Cărți și capitole din cărți publicate

5.1. Cărți/capitole publicate în edituri internaționale

- [1.] **Szidónia Lefkovits**, László Lefkovits, László Szilágyi, (2019) “Applications of Different CNN Architectures for Palm Vein Identification” Lecture Notes in Computer Science (Lecture Notes in Artificial Intelligence), Lecture Notes in Computer Science (Lecture Notes in Artificial Intelligence), Springer, Print ISBN 978-3-030-26772-8
- [2.] **Szidónia Lefkovits**, László Szilágyi , László Lefkovits “Brain Tumor Segmentation and Survival Prediction Using a Cascade of Random Forests”. In: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries. BrainLes Lecture Notes in Computer Science, vol 11384. Springer, Cham, ISBN 978-3-030-11725-2, 2019



- [3.] László Szilágyi, **Szidónia Lefkovits**, Zsolt Levente Kucsván “A Self-tuning Possibilistic c-Means Clustering Algorithm”, The 15th International Conference on Modeling Decisions for Artificial Intelligence, LNAI 11144, Springer, Cham, ISBN 978-3-030-00201-5, 2018
- [4.] **Szidónia Lefkovits**, Simina Emerich, László Szilágyi “Biometric System Based on Registration of Dorsal Hand Vein Configurations” Image and Video Technology. PSIVT 2017. Lecture Notes in Computer Science, vol 10799. Springer, Cham, ISBN 978-3-319-92752-7, 2018
- [5.] Zoltán Kapás, László Lefkovits, David Icănzan, Ágnes Gyórfi, Barna Iantovics, **Szidónia Lefkovits**, Sándor M. Szilágyi, László Szilágyi “Automatic brain tumor segmentation in multispectral MRI volumes” Image and Video Technology. PSIVT 2017. Lecture Notes in Computer Science, vol 10749. Springer, Cham, ISBN 978-3-319-75785-8, 2018
- [6.] László Lefkovits, **Szidónia Lefkovits**, Mircea-Florin Vaida, Simina Emerich, Raul Măluțan (2017) “Comparison of Classifiers for Brain Tumor Segmentation” IFMBE (International Federation for Medical and Biological Engineering) Proceedings, Springer, Cham, Print ISBN 978-3-319-52874-8
- [7.] László Lefkovits, **Szidónia Lefkovits**, László Szilágyi (2017) Brain Tumor Segmentation with Optimized Random Forest. In: Crimi A., Menze B., Maier O., Reyes M., Winzeck S., Handels H. (eds) Brainlesion: Glioma, Multiple Sclerosis, Stroke and Traumatic Brain Injuries. BrainLes 2016. Lecture Notes in Computer Science, vol 10154. Springer, Cham, Print ISBN 978-3-319-55523-2:

5.2. Cartți publicate în edituri naționale

- [1.] **Szidónia Lefkovits**, László Lefkovits Bazele programării orientate pe obiecte în limbajul Java, “Petru Maior” University Press, 2017, ISBN: 978-606-581-135-5, 257 pagini

6. Brevete

Nu este cazul

7. Proiecte de cercetare pe baza de contract/grant obținute prin competiție

7.1. Proiecte de cercetare pe baza de contract/grant obținute prin competiție internațională

Nu este cazul.

7.2. Proiecte de cercetare pe baza de contract/grant obținute prin competiție națională

- [1.] Proiect de cercetare DOMUS Hungarica, Academia de științe Maghiară Titlul proiectului “Study of Deep Learning based Convolutional Neural Network Architectures on High Performance Computing Systems used for Image Segmentation”, 5231/23/2018/HTMT, director
- [2.] 2016-2018: Bridge Grant PN-III-P2-2.1-BG-2016-0343 intitulat: “Dezvoltarea unor tehnologii de simulare computațională 3D a circulației coronariene și perfuziei miocardice bazate pe imagistică de fuziune” director proiect: prof. univ. dr. Sándor-Miklós Szilágyi, octombrie 2016- 2018 (2 ani), membru, valoare aprox. 100000 Euro



- [3.] 2014-2015: Grant de cercetare post-doctoral finanțat prin Programul Operational Sectorial Dezvoltarea Resurselor Umane Titlul proiectului: „Rețea transnațională de management integrat al cercetării postdoctorale în domeniul Comunicarea științei. Construcție instituțională (școală postdoctorală) și program de burse (CommScie)” Universitatea „Al. I. Cuza” Iași, POSDRU/159/1.5/S/133652, director, valoare 10000 Euro
- [4.] 3. aprilie – decembrie 2013 Proiect POSDRU/87/1.3/S60891 „Școala universitară de formare inițială și continuă a personalului didactic și a trainerilor din domeniul specializărilor tehnice și ingineresti DidaTec, membru, valoare >400000 Euro
- [5.] Segmentarea imaginilor medicale bazată pe metode multi-atlas, pentru diagnosticare și terapeutică, Institutul Programelor de Cercetare al Universitatii Sapiientia. director proiect prof. univ. dr. László Szilágyi (16 luni) 1 iunie 2019- 31.11. 2020, membru, valoare <50000

8. Contracte de interes științific și/sau economic cu parteneri din țară și din străinătate

Nu este cazul

9. Aplicații - Resurse umane - Premiera rezultatelor cercetării

Best paper awards:

- [1.] László Lefkovits, **Szidónia Lefkovits**, Simina Emerich “Biometric Identification Based on Feature Fusion with PCA and SVM” The 10th International Conference on Machine Vision, 13-25 November 2017, Vienna, Austria, SPIE, ISI Thomson - CPCI-S, CORE C, **Best presentation award**
- [2.] László Lefkovits, **Szidónia Lefkovits**, Simina Emerich, Septimiu Crișan “Human Identification Using Multi-region PCA for Iris Recognition” Fifth International Conference on Advances in Computing, Communication and Information Technology - CCIT 2017, 2-3 September 2017, Zürich, Switzerland, pp. 123 – 127, ISBN 978-1-63248-131-3, theIRED, **Best paper award**
- [3.] **Szidónia Lefkovits** “Hybrid Face Detector Based on Boosted Classifiers” 8th International Conference of PhD Students in Computer Science, Szeged, Hungary 28-30th of June 2012, **Best talk of the session award**

10. Alte contribuții științifice

10.1. Citări / *h*-index

Web of Science:14; *h*-index: 2

Scopus: 24; *h*-index: 3

Google Scholar: 209; *h*-index: 5



10.2. Referent la reviste de specialitate cotate ISI sau BDI

- [1.] Reviewer la IEEE Access Journal, ISSN: 2169-3536, zona roșie, Q1, IF=4.098 (2018)
- [2.] Scientific Bulletin of the "Petru Maior" University of Tîrgu-Mureș
- [3.] Acta Universitatis Sapientiae Informatica and Electrical and Mechanical Engineering

10.3. Membru în comitetul științific/de program al unor conferințe, simpozioane, workshop-uri indexate ISI sau BDI

- [1.] International Conference INTER-ENG Interdisciplinarity in Engineering 2014, 2015, 2016, 2017, 2018, 2019
- [2.] International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics 2015,2017
- [3.] International Conference on Machine Vision ICMV 2016 ,2017, 2018, 2019
- [4.] International Symposium on Digital Forensic and Security 2017

Reviewer la conferințele

- [5.] Medical Image Computing and Computer Assisted Interventions I BrainLes Section BRAIN Tumor Segmentation MICCAI BRATS, **Core A**, 2016, 2018
- [6.] Advanced Concepts for Intelligent Vision Systems ACIVS 2016, **Core B**
- [7.] European Signal Processing Conference EUSIPCO 2016, **Core B**
- [8.] The British Machine Vision Conference BMVC 2017, **Core B**
- [9.] International Conference on Advances in Computing, Communication and Information Technology CCIT 2017
- [10.] Session Chair at the International Conference on Computer Graphics, Visualization and Computer Vision WSCG 2018, Pilsen, Czech Republic, **Core B**
- [11.] Session Chair at the International Conference on Machine Vision 2016, Nisa, France, **CORE C**
- [12.] Session Chair at the International Conference InterEng 2014, Tg. Mureș

10.4. Director/Editor reviste de specialitate cotate ISI sau BDI

- [1.] Associate Editor IEEE Access Journal, ISSN: 2169-3536, zona roșie, Q1, IF=4.098 (2018)

Data

Semnatura