

# LISTA LUCRĂRILOR ȘTIINȚIFICE

Numele și prenumele: **BAKÓ László**

## A. Teza de doctorat.

Universitatea Transilvania din Brașov,  
Facultatea de Inginerie Electrică și Știința Calculatoarelor,  
Domeniul fundamental: Științe Inginerești,  
Domeniul: Inginerie Electronică și Telecomunicații,  
Titlul tezei de doctorat: "Sisteme Adaptive cu Rețele Neuronale Artificiale Neuromorfe. Realizări cu Dispozitive Hardware Reconfigurabile",  
Conducător științific: Prof. dr. ing. Iuliu SZÉKELY

## B. Lista lucrări științifice publicate

### B1. Lucrări științifice publicate în reviste cotate ISI

- 1) **Bakó László**, *Real-time classification of datasets with hardware embedded neuromorphic neural networks*, Briefings in Bioinformatics, Special Issue: Parallel and Ubiquitous Methods and Tools in Systems Biology: May 2010; Vol. 11, No. 3, p348-363, doi: 10.1093/bib/bbp066, Oxford University Press (**Impact Factor: 7.329**)

\* Citări independente:

- în lucrări cotate ISI sau ISI proceedings:

- Cit. 1. Cawley, Seamus; Morgan, Fearghal; McGinley, Brian; Pande, Sandeep; McDaid, Liam; Harkin, Jim; , "The impact of neural model resolution on hardware Spiking Neural Network behaviour," *Signals and Systems Conference (ISSC 2010), IET Irish* , vol., no., pp.216-221, 23-24 June 2010
- Cit. 2. Mohemmed, Ammar; Schlieb, Stefan; Matsuda, Satoshi; Nikola Kasabo. [SPAN: Spike Pattern Association Neuron for Learning Spatio-Temporal Sequences](#), *International Journal of Neural Systems*, (August, 2011)
- Cit. 3. MA Nuno-Maganda, M Arias-Estrada, *A Hardware Architecture for Image Clustering Using Spiking Neural Networks*, *VLSI (ISVLSI)*, 2012, [ieeexplore.ieee.org](#)
- Cit. 4. Cawley, Seamus; Morgan, Fearghal; MCGINLEY, Brian; Pande, Sandeep; McDaid, Liam; Carrillo, Snaider and Harkin, Jim. 2011. *Hardware spiking neural network prototyping and application*. *Genetic Programming and Evolvable Machines* 12, 3 (September 2011), 257-280. DOI=10.1007/s10710-011-9130-9 <http://dx.doi.org/10.1007/s10710-011-9130-9>
- Cit. 5. Nuno-Maganda, MA; Arias-Estrada, M; Torres-Huitzil, C; Aviles-Arriaga, HH; Hernandez-Mier, Y; Morales-Sandoval, M, *A Hardware Architecture for Image Clustering Using Spiking Neural Networks*, *IEEE COMPUTER SOCIETY ANNUAL SYMPOSIUM ON VLSI (ISVLSI)*, 261-266; 10.1109/ISVLSI.2012.46 2012.
- Cit. 6. Subramaniam, A.; Cantley, K.D.; Bersuker, G.; Gilmer, D.; Vogel, E.M., "Spike-Timing-Dependent Plasticity Using Biologically Realistic Action Potentials and Low-Temperature Materials," *Nanotechnology, IEEE Transactions on*, vol.12, no.3, pp.450,459, May 2013, doi: 10.1109/TNANO.2013.2256366
- Cit. 7. Rumbell, T.; Denham, S.L.; Wennekers, T., "A Spiking Self-Organizing Map Combining STDP, Oscillations, and Continuous Learning," *Neural Networks and Learning Systems, IEEE Transactions on* , vol.25, no.5, pp.894,907, May 2014 doi: 10.1109/TNNLS.2013.2283140
- Cit. 8. C. D. Schuman, J. S. Plank, A. Disney and J. Reynolds, "An evolutionary optimization framework for neural networks and neuromorphic architectures," 2016 International Joint

*Conference on Neural Networks (IJCNN), Vancouver, BC, 2016, pp. 145-154. doi: 10.1109/IJCNN.2016.7727192*

Cit. 9. Catherine D. Schuman, Thomas E. Potok, Robert M. Patton, J. Douglas Birdwell, Mark E. Dean, Garrett S. Rose, James S. Plank, *A Survey of Neuromorphic Computing and Neural Networks in Hardware, Neural and Evolutionary Computing, CoRR 1705.06963, 2017.*

Cit. 10. Taherkhani, Aboozar, et al. "A Supervised Learning Algorithm for Learning Precise Timing of Multiple Spikes in Multilayer Spiking Neural Networks." *IEEE Transactions on Neural Networks and Learning Systems* (2018).

Cit. 11. Tang, Wei-Hua, Ho, Wen-Hsien, Chen, Yenming J., "Data assimilation and multisource decision-making in systems biology based on unobtrusive Internet-of-Things devices", *BioMedical Engineering OnLine*, volume 17, Article number: 147 (2018)

Arena, P., Calí, M., Patané, L. et al., "A CNN-based neuromorphic model for classification and decision control", *Nonlinear Dynamics*, Volume 95, Issue 3, pp 1999–2017, (2019)

- în lucrări indexate în BDI:

Cit. 12. Wang, Pu; Weise, Thomas; Chiong, Raymond, *Novel evolutionary algorithms for supervised classification problems: an experimental study, Evolutionary Intelligence, 2011, Springer Berlin / Heidelberg, ISSN 1864-5909*

Cit. 13. Seamus Cawley, Fearghal Morgan, Brian McGinley, Sandeep Pande, Liam McDaid, Snaider Carrillo, Jim Harkin, *Hardware spiking neural network prototyping and application, Genetic Programming and Evolvable Machines, September 2011, Volume 12, Issue 3, pp 257-280, 2011 - Springer*

Cit. 14. Jing, Gu; Liu, Lu-yang; Yu, Xiao-yang. *The Research of Multivariable Fuzzy Neural Network Controller based on FPGA, Journal of Harbin University of Science and Technology, Vol 16. No. 2., April 2011, China.*

Cit. 15. Rumbell, Timothy, *Self Organisation and Hierarchical Concept Representation in Networks of Spiking Neurons, University of Plymouth, UK, Phd Thesis, 2013.*

Cit. 16. Cit. 12. Asmaa Ourdighi and Abdelkader Benyettou, *An Efficient Spiking Neural Network Approach based on Spike Response Model for Breast Cancer Diagnostic, The International Arab Journal of Information Technology, Vol.13, No.3, 2014.*

Cit. 17. A Ourdighi, A Benyettou, "An Efficient Spiking Neural Network Approach based on Spike Response Model for Breast Cancer Diagnostic", *The International Arab Journal of Information Technology Vol. 13, No. 6B, 2016*

2) Brassai Sándor Tihamér, **Bakó László**, Hardware Implementation of CMAC Type Neural Network on FPGA for Command Surface Approximation, *Acta Polytechnica Hungarica - Journal of Applied Sciences at Budapest Tech Hungary, Vol. 4, No. 3, 2007, pp. 5-16, ISSN 17858860, MATARKA, IEEE.*

\* *Independent citations:*

- citations in ISI indexed journals or in CPCI indexed proceedings:

Cit. 18. Min-Kuang Wu; Widodo, S., *Single input cerebellar model articulation controller (CMAC) based maximum power point tracking for photovoltaic system, Computer Communication Control and Automation (3CA), 2010 International Symposium on, ISBN: 978-1-4244-5565-2, pp. 439 – 442*

Cit. 19. A. Taghavipour, M.S. Foumani, M. Boroushaki, *Implementation of an optimal control strategy for a hydraulic hybrid vehicle using CMAC and RBF networks, Scientia Iranica, Available online 13 March 2012, ISSN 1026-3098, 10.1016/j.scient.2012.02.019.*

Cit. 20. Bo Yang; Ran Bao; Huatao Han, "Robust Hybrid Control Based on PD and Novel CMAC With Improved Architecture and Learning Scheme for Electric Load Simulator," *Industrial Electronics, IEEE Transactions on , vol.61, no.10, pp.5271,5279, Oct. 2014 doi: 10.1109/TIE.2014.2301717*

- citations in journals and proceedings indexed by other international databases:

- Cit. 21. Slamet Widodo, *Microcontroller Implementation of Low-Cost Maximum Power Point Tracking Methods for Photovoltaic System*, 2009, Master's Thesis, Southern Taiwan University, Department of Mechanical Engineering.
- Cit. 22. S.P. Joy Vasantha Rani, K. Aruna Prabha, (2010) "[Stochastic logic computation based RBFNN with adaptive hidden layer structure](#)", *Journal of Engineering, Design and Technology*, Vol. 8 Iss: 2, pp.206 – 220.
- Cit. 23. Mehran S. Razzaghi, Alireza Mohebbi. *Predicting the Seismic Performance of Cylindrical Steel Tanks Using Artificial Neural Networks (ANN).*, *Acta Polytechnica Hungarica*, Vol. 8, No. 2, 2011.
- Cit. 24. Khan, H.A. and Tan, A.C.M. and Xiao, Y. and Sreeram, V. and Iu, H.H.C., *An implementation of novel CMAC algorithm for very short term load forecasting*, *Journal of Ambient Intelligence and Humanized Computing*, Springer-Verlag, p. 1-11, issn 1868-5137, 2012, doi= 10.1007/s12652-012-0157-4
- Cit. 25. Belfiore, N. P., & Rudas, I. J. (2014, November). *Applications of computational intelligence to mechanical engineering*. In *Computational Intelligence and Informatics (CINTI), 2014 IEEE 15th International Symposium on* (pp. 351-368). IEEE.

## B2. Lucrări științifice publicate în reviste indexate în baze de date internaționale

- 1) **Bakó L.**, Brassai, S.T., “ Embedded neural controllers based on spiking neuron models,”, *Pollack Periodica* , An International Journal for Engineering and Information Sciences, DOI: 10.1556/Pollack.4.2009.3.13, Vol. 4, No. 3, pp. 143–154 (December 2009), Akadémiai Kiadó, Budapest, Hungary, ISSN 1788-3911, SJR — SCImago Journal & Country Rank: 0,031.  
 Cit. 26. Pintér Ádám, Schmuck Balázs Szénási Sándor, “Short text evaluation with neural network”, *Pollack Periodica* , Volume 13, Issue 3, December 2018.
- 2) Brassai, S.T., **Bakó L.**, “Visual Trajectory Control of a Mobile Robot Using FPGA Implemented Neural Network”, *Pollack Periodica*, An International Journal for Engineering and Information Sciences, Pollack.4.2009.3.12, Vol. 4, No. 3, pp. 129–142 (December 2009), Akadémiai Kiadó, Budapest, Hungary, ISSN 1788-3911, SJR — SCImago Journal & Country Rank: 0,031.  
 Cit. 27. Kovács Bence, *Path planning of autonomous service robots*, Pattantyús-Ábrahám Géza Gépészeti Tudományok Doktori Iskola. (2017.), Ph.D. Dissertation, BME, Budapest.
- 3) **Bakó László**, Brassai Sándor Tihamér, Spiking neural networks built into FPGAs: Fully parallel implementations, *WSEAS Transactions on Circuits and Systems*, Issue 3, Volume 5, March 2006, pp346-353, ISSN 1109-2734, British Library Direct, SJR — SCImago Journal & Country Rank: 0,033.

\* *Independent citations:*

- citations in journals and proceedings indexed by other international databases:

- Cit. 28. Yutaka Maeda, Yoshinori Fukuda, and Takashi Matsuoka. 2008. *Pulse density recurrent neural network systems with learning capability using FPGA*. *WSEAS Trans. Cir. and Sys.* 7, 5 (May 2008), 321-330.
- Cit. 29. Perez-Peña, Fernando; Morgado-Estevez, Arturo; Linares-Barranco, Alejandro; Jimenez-Fernandez, Angel; Gomez-Rodriguez, Francisco; Jimenez-Moreno, Gabriel; Lopez-Coronado, Juan; *Neuro-Inspired Spike-Based Motion: From Dynamic Vision Sensor to Robot Motor Open-Loop Control through Spike-VITE*; 2013, *Sensors*, 1424-8220, Vol. 13, Nr. 11, pp. 15805-15832, doi:10.3390/s131115805, <http://www.mdpi.com/1424-8220/13/11/15805>.
- Cit. 30. Morgado Estévez, Arturo, Gabriel Jiménez Moreno, Juan López Coronado, Fernando Pérez Peña, Ángel Francisco Jiménez Fernández, Francisco de Asís Gómez Rodríguez, and Alejandro Linares Barranco. "Neuro-Inspired Spike-Based Motion: From Dynamic Vision Sensor to Robot Motor Open-Loop Control through Spike-VITE." (2013). *Sensors* 2013, 13, 15805-15832; doi:10.3390/s131115805S.

- 4) T. Brassai, **L. Bakó**, L. Losonczy Assistive Technologies for Visually Impaired People, Acta Universitatis Sapientiae, Electrical and Mechanical Engineering, 3 (2011) pp. 39–50 (EBSCO databases).

- Cit. 31. Periša, Marko, Dragan Peraković, and Slavko Šarić. "Conceptual Model of Providing Traffic Navigation Services to Visually Impaired Persons." *PROMET-Traffic&Transportation* 26.3 (2014).
- Cit. 32. MARKO PERIŠA, Ph D., Ph D. DRAGAN PERAKOVIĆ, and Ph D. SLAVKO ŠARIĆ. "CONCEPTUAL MODEL OF PROVIDING TRAFFIC NAVIGATION SERVICES TO VISUALLY IMPAIRED PERSONS." *crossings* 8.9: 10.
- Cit. 33. Periša, Marko; Jovović, Ivan; Forenbacher, Ivan. *A conceptual applicative solution for helping people with reduced mobility // RCITD 2014 Proceedings in Research Conference In Technical Disciplines / Ing. Michal Mokrys; Ing. Stefan Badura, Ph.D., editor(s). Zilina: EDIS - Publishing Institution of the University of Zilina, 2014. 82-85 (lecture,international peer-review,published,scientific).*
- Cit. 34. Adagale, Vaishali, and Sanjivani Mahajan. "Route Guidance System For Blind People Using GPS And GSM.", *Int. Journal of Electrical and Electronic Engineering and Telecommunications*, Vol. 4, No. 2, April 2015, ISSN 2319 – 2518, pp. 16-21, [http://www.ijeetc.com/ijeetcadmin/upload/IJEETC\\_5524b75e51773.pdf](http://www.ijeetc.com/ijeetcadmin/upload/IJEETC_5524b75e51773.pdf)
- Cit. 35. S. Umadevi, S. Sebija, "Electronic Assistive Aid For Blind And Visually Impaired", *International Journal of Engineering Trends and Technology (IJETT) – Volume23 Number 5- May 2015*, pp. 263-267, <http://www.ijettjournal.org/2015/volume-23/number-5/IJETT-V23P249.pdf>
- Cit. 36. Kamaludin, Muhammad Haziq, Nasrul Humaimi Mahmood, Abd Hamid Ahmad, Camallil Omar, and Masdinah Alauyah Md Yusof. "Sonar Assistive Device for Visually Impaired People." *Jurnal Teknologi* 73, no. 6 (2015).
- Cit. 37. Adagale, Vaishali, and Sanjivani Mahajan. "ROUTE GUIDANCE SYSTEM FOR BLIND PEOPLE USING GPS AND GSM." (2015).
- Cit. 38. Jesie, R. Sherline. "Advanced talking navigation cane for visually impaired using capacitive touch keypad." *In Circuit, Power and Computing Technologies (ICCPCT), 2015 International Conference on*, pp. 1-5. IEEE, 2015.
- Cit. 39. Duarte, Karen, José Cecilio, Jorge Sá Silva, and Pedro Furtado. "Information and Assisted Navigation System for Blind People." *Proceedings of the 8th International Conference on Sensing Technology*, Sep. 2-4, 2014, Liverpool, UK, pp.470-473.
- Cit. 40. LAMAS, Amilton Costa; SOUZA, Rafael Isidro. *Sistema de apoio à localização para deficientes visuais. Extensio: Revista Eletrônica de Extensão, Florianópolis*, v. 13, n. 24, p. 37-48, dez. 2016. ISSN 1807-0221
- Cit. 41. Bhowmick, Alexy, and Shyamanta M. Hazarika. "An insight into assistive technology for the visually impaired and blind people: state-of-the-art and future trends." *Journal on Multimodal User Interfaces* 11.2 (2017): 149-172.
- Cit. 42. Zubov, Dmytro. "Building IoT With Arduino." *Emerging Trends and Applications of the Internet of Things*. IGI Global, 2017. 117-166.
- Cit. 43. Gopinath M, Raja MA, *LabVIEW BASED BLIND PATH NAVIGATION SYSTEM USING GPS-A NOVEL APPLICATION*, 46th ISTE Annual National Convention & National Conference 2017. Gulzar Group of Institutes, Ludhiana, Punjab-141401 (INDIA). *International Journal of Advance Research and Innovation (ISSN 2347 – 3258)*. (2017.)
- Cit. 44. Sain, Mohit. *Portable Monitoring and Navigation Control System for Helping Visually Impaired People*. Diss. Université d'Ottawa/University of Ottawa, PhD Thesis, 2017.
- Cit. 45. Ghazali, Nurul Fathiah, et al. "Wearable Device for Malaysian Ringgit Banknotes Recognition Based on Embedded Decision Tree Classifier." *Journal of Telecommunication, Electronic and Computer Engineering (JTEC)* 10.1 (2018): 129-137.
- Cit. 46. Chathurika Sewwandi Silva, Chathurika Sewwandi "Towards Intelligent Sensor Fusion based Visually Impaired Navigation: An Assistive Technology Framework", *International*

*Conference on Emerging Trends in Artificial Intelligence (ICETAI 2015), Open University, Sri Lanka, December 2015.*

*Cit. 47. Dmytro Zubov, "Building IoT With Arduino", Polytechnic University of San Luis Potosí, Mexico, Source Title: Emerging Trends and Applications of the Internet of Things, 2017, Pages: 50, DOI: 10.4018/978-1-5225-2437-3.ch005.*

**B3. Lucrări științifice publicate în reviste din străinătate (altele decât cele menționate anterior).**

1. **Bakó L.**, Székely I (2009). *Challenges for implementations of delay-coded neuromorphic neural networks on embedded digital hardware*. Frontiers in Neuroinformatics. Conference Abstract: 2nd INCF Congress of Neuroinformatics. DOI:10.3389/conf.neuro.11.2009.08.050, <http://frontiersin.org/neuroinformatics/>

**B4. Lucrări științifice publicate în reviste din țară, recunoscute CNCSIS (altele decât cele din baze de date internaționale).**

1. **Bakó László**, Székely Gyula (Iuliu), Brassai Sándor Tihamér, *Development of Advanced Neural Models. Software And Hardware Implementation*, Timișoara, Transaction on Electronics and communication, Scientific buletin of the „Politehnica” University of Timișoara, 2004, p214-219, ISSN 15833380 (**Cat. B+**)
2. Brassai Sándor Tihamér, Dávid László, **Bakó László**, *Hardware Implementation of CMAC based artificial network with process control application*, Timișoara, Transaction on Electronics and communication, Scientific buletin of the „Politehnica” University of Timisoara, 2004, p209-213, ISSN 1583-3380 (**Cat. B+**)
3. **BAKÓ László**, *Implementarea încorporată a unei metode de extragere a fluxului optic din secvențe video*, Simpozionul Național Studiile Doctorale și Postdoctorale în Contextul Cercetării Interdisciplinare, Universitatea Petru Maior din Tirgu Mures, 19 MARTIE 2015, Petru Maior University Press, ISBN 978-606-581-134-8, editors Boldea, I. And Sigmirean, C., pp. 74-84.

**B5. Lucrări științifice publicate în volumele manifestărilor științifice**

1. Fearghal Morgan, Declan O'Loughlin, Jeremy Audiger, Yohan Boyer, Niall Timlin-Canning, Krzysztof Kępa, Ian Gallivan, Frank Callaly, **László Bakó**, “viciLogic 2.0: Online learning and prototyping of digital systems using PYNQ-Z1/-Z2 SoCs”, 29th International Symposium on Rapid System Prototyping (RSP), October 4-5, 2018, Torino, Italy (*in press by IEEEExplore*).
2. Aidan Boyd, Frank Callaly, Dáire Canavan, Declan O'loughlin, Jeremy Audiger, Yohan Boyer, Niall Timlin-Canning, **László Bakó**, Szabolcs Hajdú, Fearghal Morgan, “ICCapt: Online design capture and HDL generation, with PYNQ SoC prototyping in the cloud”, 29th Irish Signals and Systems Conference (ISSC 2018), Belfast, 21st - 22nd June, 2018. (*in press by IEEEExplore*)
3. Dáire Canavan, Declan O'loughlin, Frank Callaly, Aidan Boyd, Jeremy Audiger, Yohan Boyer, Joan Espanol, Marion Bertrand, **László Bakó**, Szabolcs Hajdú, Fearghal Morgan, “Audio DSP remote hardware prototyping and console creation”, 29th Irish Signals and Systems Conference (ISSC 2018), Belfast, 21st - 22nd June, 2018. (*in press by IEEEExplore*)
4. **Bakó, László**, Szabolcs Hajdú and Fearghal Morgan. 2017. Evaluation and Comparison of Low FPGA Footprint, Embedded Soft-Core Processors. MACRo 2015. 2(1): 23-30. Retrieved 13 Feb. 2018, from doi:10.1515/macro-2017-0003
5. Róbert Moni, **László Bakó**, Szabolcs Hajdú, Fearghal Morgan and Sándor Tihamér Brassai, “Embedded Real-time Implementation of a Computational Efficient Optical Flow Extraction Method for Intelligent Robot Control Applications”, 24<sup>th</sup> Irish Conference on Artificial

- Intelligence and Cognitive Science, University College Dublin, September 20-21 2016. ([http://aics2016.ucd.ie/papers/full/AICS\\_2016\\_paper\\_47.pdf](http://aics2016.ucd.ie/papers/full/AICS_2016_paper_47.pdf))
6. **László BAKÓ**, Călin ENĂCHESCU, "Challenges in the embedded implementation optical flow computation", 2<sup>nd</sup> CommScie International Conference "Challenges for Sciences and Society in Digital Era", Iași, December 4th – 5th, 2015, PIM Press, ISBN 978-606-13-2892-5, pp. 12-16.
  7. **Laszlo Bako**, Szabolcs Hajdu, Sandor-Tihamer Brassai, Fearghal Morgan, Calin Enachescu, Embedded Implementation of a Real-Time Motion Estimation Method in Video Sequences, Procedia Technology, Volume 22, 2016, Pages 897-904, ISSN 2212-0173, The 9th International Conference Interdisciplinarity in Engineering, INTER-ENG, 8-9 October 2015, "Petru Maior" University of Tîrgu-Mureș, Romania  
*Cit. 48. Aurelio BermúdezFrancisco MonteroMaría T. LópezAntonio Fernández-CaballeroJosé L. Sánchez, "Optimization of lateral interaction in accumulative computation on GPU-based platform", The Journal of Supercomputing, March 2019, Volume 75, Issue 3, pp 1670–1685.*
  8. **László Bakó**, "On the feasibility of low resource-cost embedded optical flow extraction implementations", HiPEAC Workshop on Building Partnership, BME Budapest, Hungary, June 2015, Invited Speaker.
  9. **László Bakó**, Sándor-Tihamér Brassai and Călin Enăchescu, „Design and validation of a low resource-cost video data processing method for embedded implementation of optical flow extraction”, Proceedings of the 6<sup>th</sup> International Carpathian Control Conference (ICCC), Szilvásvárad, Hungary, May 27-30, IEEE 978-1-4799-7370-5/15, 2015, pp.13-18.
  10. Brassai, S. T., Hajdu, S., Tamas, T., & **Bakó, L.** (2015, May). Hardware implemented adaptive neuro fuzzy system. In Carpathian Control Conference (ICCC), 2015 16th International (pp. 58-63). IEEE.  
*Cit. 49. Al Azzawi, Ahmed Khazal Younis & Ercan, Tuncay. (2018). ANFIS Analysis of Wireless Sensor Data with FPGA. 2602-3563.*
  11. **László Bakó**, Sándor-Tihamér Brassai, Călin Enăchescu, "Embedded Implementation of a Resource-Efficient Optical Flow Extraction Method", Proceedings of the 5th International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, Sapientia University, Department Of Electrical Engineering, Department Of Mechanical Engineering, Tîrgu Mures, Romania, MACRo 2015. Volume 1, Issue 1, Pages 163–175, ISSN (Online) 2247-0948, DOI: 10.1515/macro-2015-0016, May 2015.  
*Cit. 50. Xu, Zhengguang & Wang, Luyao & Wang, Jie. (2018). A Method for Distance Measurement of Moving Objects in a Monocular Image. 245-249. 10.1109/SIPROCESS.2018.8600495.*
  12. L.F. Márton, S.T. Brassai, **L. Bakó**, L. Losonczi, "Detrended Fluctuation Analysis of EEG Signals" Procedia Technology, Elsevier, 2014, Volume 12, Pages 125–132.  
*Cit. 51. Janjarasjitt, S., and K. A. Loparo. "Examination of scale-invariant characteristics of epileptic electroencephalograms using wavelet-based analysis." Computers & Electrical Engineering 40.5 (2014): 1766-1773.*  
*Cit. 52. Paul, Sananda; Mazumder, Ankita; Ghosh, Poulami; Tibarewala, D.N.; Vimalarani, G., "EEG based emotion recognition system using MFDDFA as feature extractor," Robotics, Automation, Control and Embedded Systems (RACE), 2015 International Conference on , vol., no., pp.1,5, 18-20 Feb. 2015doi: 10.1109/RACE.2015.7097247*  
*Cit. 53. Marri, K.; Swaminathan, R., "Multifractal analysis of sEMG signals for fatigue assessment in dynamic contractions using Hurst exponents," in Biomedical Engineering Conference (NEBEC), 2015 41st Annual Northeast , vol., no., pp.1-2, 17-19 April 2015, doi: 10.1109/NEBEC.2015.7117117*



- Cit. 54. Namazi H, Khosrowabadi R, Hussaini J, Habibi S, Farid AA, Kulish VV, "Analysis of the influence of memory content of auditory stimuli on the memory content of EEG signal.", *Oncotarget*. 2016 Aug 11. doi: 10.18632/oncotarget.11234
- Cit. 55. Kelwade, J. P., and S. S. Salankar. "An optimal structure of multilayer perceptron using particle swarm optimization for the prediction of cardiac arrhythmias." *Reliability, Infocom Technologies and Optimization (Trends and Future Directions)(ICRITO)*, 2016 5th International Conference on. IEEE, 2016.
- Cit. 56. Jac Fredo, Agastinose Ronickom, et al. "CLASSIFICATION OF NORMAL AND KNEE JOINT DISORDER VIBROARTHOGRAPHIC SIGNALS USING MULTIFRACTALS AND SUPPORT VECTOR MACHINES." *Biomedical Engineering: Applications, Basis and Communications* 29.03 (2017): 1750016.
- Cit. 57. Zebende, Gilney Figueira, Florêncio Mendes Oliveira Filho, and Juan Alberto Leyva Cruz. "Auto-correlation in the motor/imaginary human EEG signals: A vision about the FDFA fluctuations." *PloS one* 12.9 (2017): e0183121.
- Cit. 58. Li, Xin, Erjuan Cai, and Jiannan Kang. "EEG Multi-fractal De-trended Fluctuation Mental Stress Analysis." *Chinese Intelligent Systems Conference*. Springer, Singapore, 2017.
- Cit. 59. Rakshit, Arnab, et al. "Fractal analysis of EEG signals for studying the effect of cognitive stress on brain." *International Journal of Biomedical Engineering and Technology* 25.2-4 (2017): 336-369.
- Cit. 60. P. Uthayakumar I, G. Jayalalitha, "A Comparison of Fractal Dimension Algorithms by Hurst Exponent using Gold Price Time Series", *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, Volume 6 Issue II, February 2018
- Cit. 61. Newson Jennifer J., Thiagarajan Tara C., "EEG Frequency Bands in Psychiatric Disorders: A Review of Resting State Studies", *Frontiers in Human Neuroscience*, VOLUME 12, 2019.
- Cit. 62. BENÍTEZ ALDÁS, Marcos Raphael, "Estudio y Análisis de Métodos para la Extracción de Características y Clasificación de Emociones Basados en EEG", MsC thesis, UNIVERSIDAD AUTONOMA DE MADRID, ESCUELA POLITECNICA SUPERIOR, 2018.
- Cit. 63. Ixchel Lina Reyes, "Fractal dynamics of children with learning disorders in Mexico, under the Postmodernist Systems Thought", PhD Thesis, Instituto Politecnico Nacional, Mexico, 2019.
- Cit. 64. Matamoros O.M., Escobar J.J.M., Reyes I.L., Troya T.I.C., Padilla R.T. (2020) Dynamic Scaling of EEG Fluctuations of Patients with Learning Disorders Based on Artificial Intelligence. In: Bi Y., Bhatia R., Kapoor S. (eds) *Intelligent Systems and Applications. IntelliSys 2019. Advances in Intelligent Systems and Computing*, vol 1038. Springer, Cham
- Cit. 65. Bhole, Leena & Ingle, Maya. (2019). EEG based Emotion Classification using Nonlinear Features. *International Journal of Research in Advent Technology*. 7. 628-635. 10.32622/ijrat.752019357.
13. L.F. Márton, **L. Bakó**, S.T. Brassai, L. Losonczi, "Multichannel EEG Signal Recording Analysis based on Cross Frequency Coupling Method" - *Procedia Technology*, Elsevier 2014, Volume 12, Pages 133–140.
- Cit. 66.** Borowicz, Adam. "WARPED S-TRANSFORM FOR ANALYSING THE BRAIN WAVES.", *Advances in Computer Science Research*, vol. 11, pp. 5-16, 2014.
- 14. Bakó, L.**, Brassai, S.T., Losonczi L. and Márton, L.F., "Evolving advanced neural networks on run-time reconfigurable digital hardware platform.", In *Proceedings of the 3rd International Workshop on Adaptive Self-Tuning Computing Systems (ADAPT'13 - January 21-23, 2013, Berlin, Germany)*, ACM, New York, NY, USA, 2013, Article 3, 3 pages. DOI=10.1145/2484904.2484907, <http://doi.acm.org/10.1145/2484904.2484907>
- 15. Bakó, L.**; Brassai, S.; Kolcsar, A.; Losonczi, L.; Marton, L., „Neuromorphic Neural Network Parallelization on CUDA Compatible GPU for EEG Signal Classification”, *IEEE Computer Modeling and Simulation (EMS)*, 2012 Sixth UKSim/AMSS European Symposium on, Valetta,

Malta, 14-16 Nov. 2012, pp.359-364, ISBN 978-1-4673-4977-2, DOI 10.1109/EMS.2012.87. (IEEEExplore)

- Cit. 67. Kumar R, Cheema AK. GPU Implementation of a Deep Learning Network for Financial Prediction. *The International Journal of Science and Technoledge*. 2014 May 1;2(5):374.
- Cit. 68. Guo Bo, Zhang Rui, Xu Guang, Shi Chuangming, Yang Li, Predicting Students Performance in Educational Data Mining, In: . IEEE, 2015. (ISBN 1467373702) pp. 125-128.
- Cit. 69. Sheng Yiqiang, Jinlin WANG, Chaopeng LI, Weining QI, Max-min-degree neural network for centralized-decentralized collaborative computing, *IEICE TRANSACTIONS ON COMMUNICATIONS (ISSN: 0916-8516) 99: (4) pp. 841-848. (2016)*
- Cit. 70. Sheng Yiqiang, Jinlin WANG, Yi LIAO, Zhenyu ZHAO, A Machine Learning Model for Wide Area Network Intelligence with Application to Multimedia Service, *IEICE TRANSACTIONS ON COMMUNICATIONS (ISSN: 0916-8516) 99: (11) pp. 2263-2270. (2016)*
- Cit. 71. Ganeshamoorthy, K., and Nagulan Ratnarajah. "On the Performance of Parallel Back-propagation Neural Network Implementations Using CUDA." March 2017, Conference: CATA 2017At: Honolulu, Hawaii, USA
16. Brassai, S.T., **Bakó, L.**, Losonczi L. and Márton, L.F., "Parallel pipeline solution for hardware implementation of artificial neural networks with in circuit real time weight update", 8th International Conference on High-Performance and Embedded Architectures and Compilers (HiPEAC), 2nd Workshop on Design Tools and Architectures for Multi-Core Embedded Computing Platforms (DITAM'13), January 21-23, 2013, Berlin, Germany.
17. László-Ferenc Márton, **László Bakó**, Sándor-Tihamér Brassai, Péter Szigeti, Norbert Katona, Lóránd Farkas, Petra Pável, Hajnal Kelemen, Lajos Losonczi, "Signals for a spherical robot control based on EEG recordings", Proceedings of the 3rd International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, MACRo 2013, Sapientia University, Department Of Electrical Engineering, Department Of Mechanical Engineering, Tîrgu Mures, Romania.
18. László-Ferenc Márton, **László Bakó**, Sándor-Tihamér Brassai, Péter Szigeti, Norbert Katona, Lóránd Farkas, Petra Pável, Lajos Losonczi, "New ways in nonstationary, nonlinear EEG signal processing", Proceedings of the 3rd International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, MACRo 2013, Sapientia University, Department Of Electrical Engineering, Department Of Mechanical Engineering, Tîrgu Mures, Romania.
19. **Bakó, L.**, Brassai, S.T., Losonczi L. and Márton, L.F., "Multiple processor core systems on FPGA circuits implementing bio-inspired neural networks for classification tasks", 8th International Conference on High-Performance and Embedded Architectures and Compilers (HiPEAC), 2nd Workshop on Design Tools and Architectures for Multi-Core Embedded Computing Platforms (DITAM'13), January 21-23, 2013, Berlin, Germany.
20. L. Losonczi, L. Katona, T.J. Viney, **L. Bakó**, S.T. Brassai, L.F. Márton, "Neurobiological, smart signal acquisition and improved information extraction methods", 2012, 8<sup>th</sup> Forum of Neuroscience (FENS), July 14-18, 2012, Barcelona, Spain.
21. **Bakó, L.**, György-Mózes E., Brassai, S.T., Losonczi L., Márton, L.F., "Neural Network Parallelization on FPGA Platform for EEG Signal Classification", Proceedings of The 6th edition of the Interdisciplinarity in Engineering International (InterEng'12) Conference, "Petru Maior" University of Tîrgu Mures, Romania, 4-5 October 2012, pp. 370-376.
22. Losonczi L., **Bakó, L.**, Brassai, S.T., Márton, L.F., "Hilbert-Huang Transform used for EEG Signal Analysis", Proceedings of The 6th edition of the Interdisciplinarity in Engineering International (InterEng'12) Conference, "Petru Maior" University of Tîrgu Mures, Romania, 4-5 October 2012, pp. 361-369.



*\* Independent citations:*

- citations in journals and proceedings indexed by other international databases:

*Cit. 72. MÓZES, Ferenc-Emil, and János SZALAI. "COMPUTING THE INSTANTANEOUS FREQUENCY FOR AN ECG SIGNAL." Scientific Bulletin of the Petru Maior University of Targu Mures 9.2 (2012).*

23. Márton, L.F., Brassai, S.T., Germán-Salló Z., **Bakó, L.**, Losonczi L., “Technical Signal Processing with Application In EEG Channels Correlation”, Proceedings of The 6th edition of the Interdisciplinarity in Engineering International (InterEng'12) Conference, “Petru Maior” University of Tîrgu Mures, Romania, 4-5 October 2012, pp. 339-348.
24. Brassai, S.T., **Bakó, L.**, Márton, L.F., Germán-Salló, Z., Losonczi L., “FPGA Based Implementation of Wavelet Convolution”, Proceedings of The 6th edition of the Interdisciplinarity in Engineering International (InterEng'12) Conference, “Petru Maior” University of Tîrgu Mures, Romania, 4-5 October 2012, pp. 332-338.
25. Brassai, S.T., Losonczi L., Márton, L.F., **Bakó, L.**, Iantovics B., Enăchescu C., “Intelligence in Mobile Robot Navigation”, Proceedings of The 6th edition of the Interdisciplinarity in Engineering International (InterEng'12) Conference, “Petru Maior” University of Tîrgu Mures, Romania, 4-5 October 2012, pp. 326-331.
26. L. Losonczi, **L. Bakó**, S.T. Brassai, L. Katona, L.F. Márton, Portable EEG Signal Measuring and Processing Network, TOBI Workshop III, Bringing BCIs to End-Users: Facing the Challenge: Evaluation, User Perspectives, User Needs, and Ethical Questions, Würzburg, Germany, March 20-22, 2012, pp. 37-38.
27. **Bakó L.**, “Hardware Implementations of Artificial Neuromorphic Neural Network Systems using Reconfigurable Digital Devices”, Poster, 2011 EDAA / ACM SIGDA PhD Forum at Design, Automation & Test in Europe (DATE) in Grenoble, France, March 14-18, 2011.
28. Brassai, S.T., **Bakó, L.**, Márton, L.F., „Parallelization Techniques for BCI Signal Computation”, *Proceedings of the 3<sup>rd</sup> International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics (MACRo '11)*, Scientia publishing House, Cluj-Napoca, 2011, pp.55-61, ISSN 2247 – 0948.
29. **Bakó L.**, Fulop P. I., „Evolving Advanced Neural Networks on Run-Time Reconfigurable Digital Hardware Platform”, Sixth International PhD, DLA Symposium, University of Pécs, Hungary, Pollack Mihály Faculty of Engineering, 25-26 October, 2010, Edited by Prof. Miklós Iványi, Rotari Press, Komló, Hungary.
30. Brassai S.T., Dézsi H., **Bakó L.**, „Navigation system implementation for a quad rotor helicopter”, Sixth International PhD, DLA Symposium, University of Pécs, Hungary, Pollack Mihály Faculty of Engineering, 25-26 October, 2010, Edited by Prof. Miklós Iványi, Rotari Press, Komló, Hungary.
31. **László Bakó**, Péter István Fülöp, Advanced Hardware Neural Network Architectures Using Embedded Multi-Core Processors, ICAI 2010 - 8th International Conference on Applied Informatics, Eger, Hungary, January 27-30, 2010.
32. Vajda, T., **Bakó L.**, Brassai S. T., „Using Dynamic Programming and Neural Networks to Match Human Action”, Proceedings of the 11th International Carpathian Control Conference, ICC 2010, May 26-28, 2010, Eger, Hungary, ISBN 978-963-06-9289-2, pp. 231-234.
33. **László BAKÓ**, Sándor Tihamér BRASSAI, Lajos LOSONCZI, László Ferenc MÁRTON, „Embedded System Based EEG Signal Processing”, Proceedings of the 2nd International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, MACRo 2010, Sapientia University, Department Of Electrical Engineering, Department Of Mechanical Engineering, May 14-15, 2010, Tîrgu Mures, Romania, ISBN 978-973-1970-39-4, pp. 63-72.

34. **Bakó, L.**, „*Real-time clustering of datasets with hardware embedded neuromorphic neural networks*”, HiBi 2009 (High performance computational systems Biology) Workshop, COSBi (Microsoft Research - University of Trento Centre for Computational and Systems Biology), Trento, Italy, October 14-16, 2009, Published by IEEE Computer Society, ISBN 978-0-7695-3809-9, pp 13-22, DOI: 10.1109/HiBi.2009.24, **CPCI indexed**.

\* *Independent citations:*

- citations in journals and proceedings indexed by other international databases:

*Cit. 73. Marco Nuño-Maganda and Cesar Torres-Huitzil. 2011. A temporal coding hardware implementation for spiking neural networks. SIGARCH Comput. Archit. News 38, 4 (January 2011), 2-7.*

- citations in ISI indexed journals or in CPCI indexed proceedings

*Cit. 74. Louis-Charles Caron, Michiel D'Haene, Frédéric Mailhot, Benjamin Schrauwen, Jean Rouat, Event management for large scale event-driven digital hardware spiking neural networks, Neural Networks, Available online 6 March 2013, ISSN 0893-6080, [10.1016/j.neunet.2013.02.005](https://doi.org/10.1016/j.neunet.2013.02.005).*

35. **Bakó, L.**, Székely, I., „*Challenges for implementations of delay-coded neuromorphic neural networks on embedded digital hardware*”, 2<sup>nd</sup> INCF Congress of Neuroinformatics, Pilsen, Czech Republic, September 6-8, 2009, Abstract book, p132-133.

36. **Bakó, L.**, „*Partially Serialized Computation in Networks of Pulse-based Artificial Neurons*”, 1<sup>st</sup> International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, MACRo 2009, Sapientia University, Department Of Electrical Engineering, Department Of Mechanical Engineering, March 20-21, 2009, Tîrgu Mureş, Romania , Abstract book, p19.

37. Brassai, S.T., **Bakó, L.**, „*Visual trajectory control of a mobile robot using FPGA implemented neural network*”, Fourth International PhD, DLA Symposium, University of Pécs, Hungary, Pollack Mihály Faculty of Engineering, 20-21 October, 2008, Edited by Prof. Miklós Iványi, ISBN 978-963-7298-27-1, Rotari Press, Komló, Hungary.

38. **Bakó, L.**, Brassai, S.T., „*Embedded neural controllers based on spiking neuron models*”, Fourth International PhD, DLA Symposium, University of Pécs, Hungary, Pollack Mihály Faculty of Engineering, 20-21 October, 2008, Edited by Prof. Miklós Iványi, ISBN 978-963-7298-27-1, Rotari Press, Komló, Hungary.

39. Brassai S. T., **L. Bakó**, „*Mobilis robot mesterséges idegsejt hálóval való szabályzása pályakövetési feladatokra*”, Enelko-SzámOkt 2008, Sumuleu-Ciuc, EMT Cluj-Napoca, 2008, ISSN: 1842-4546, p116-121

40. Brassai, S. T., Gidró L., **L. Bakó**, G. Csernath, „*Practical Implementation of an Embedded Intelligent Control System*”, Proceedings of the International Symposium for Design and Technology of Electronic Packages, Faculty Of Electrical Engineering And Computer Science, Department Of Electronics And Computers, "Transilvania" University Of Brasov and Center For Technological Electronics And Interconnection Techniques "Politehnica" University Bucharest, SIITME 2008, Predeal, Romania

41. Brassai, S. T., L. Márton, L. Dávid, **L. Bakó**, „*Hardware implemented neural network based mobile robot control*”, Proceedings of the International Symposium for Design and Technology of Electronic Packages, Faculty Of Electrical Engineering And Computer Science, Department Of Electronics And Computers, "Transilvania" University Of Brasov and Center For Technological Electronics And Interconnection Techniques "Politehnica" University Bucharest, SIITME 2008, Predeal, Romania.

42. Brassai, S.T., **Bakó, L.**, Pana, G., Dan, Şt., „*Neural Control Based on RBF Network implemented on FPGA*” Proceedings of the 11<sup>th</sup> International Conference on Optimisation of

Electrical and Electronic Equipment (OPTIM'08), ISBN 978-973-131-032-9, pp41-46, Transilvania University of Brasov, Braşov, 2008, **CPCI indexed**.

\* *Independent citations:*

- citations in journals and proceedings indexed by other international databases:

Cit. 75. S. Volokitin.: *Parallel Implementation of a Neural Network Learning Algorithm. International Journal of Computer Applications* 85(3):8-11, January 2014. Published by Foundation of Computer Science, New York, USA. doi: [10.5120/14819-3049](https://doi.org/10.5120/14819-3049)

Cit. 76. Hsin-Hung Chou, Ying-Shieh Kung, Nguyen Vu Quynh, Stone Cheng, *Optimized FPGA design, verification and implementation of a neuro-fuzzy controller for PMSM drives, Mathematics and Computers in Simulation, Available online 2 August 2012, ISSN 0378-4754, [10.1016/j.matcom.2012.07.012](https://doi.org/10.1016/j.matcom.2012.07.012).*

Cit. 77. Xiaoping Zhu; Longtao Yuan; Dong Wang; Yaowu Chen; , "FPGA Implementation of a Probabilistic Neural Network for Spike Sorting", *Information Engineering and Computer Science (ICIECS), 2010 2nd International Conference on*, vol., no., pp.1-4, 25-26 Dec. 2010, doi: 10.1109/ICIECS.2010.5677694

Cit. 78. Elitas, M.; Yavuz, O.; Erkmen, B.; , "Field Programmable Gate Array implementation of Conic Section Function Neural Network: An alternative to analog CSFNN circuitry," *Intelligent Engineering Systems (INES), 2012 IEEE 16th International Conference on*, vol., no., pp.135-138, 13-15 June 2012, doi: 10.1109/INES.2012.6249818.

Cit. 79. Zhe-Cheng Fan and Wen-Jyi Hwang\*, *Efficient VLSI Architecture for Training Radial Basis Function Networks, Sensors (Basel). 2013 March; 13(3): 3877–3848. doi: [10.3390/s130303848](https://doi.org/10.3390/s130303848)*

Cit. 80. de Souza ACD, Fernandes MAC. *Parallel Fixed Point Implementation of a Radial Basis Function Network in an FPGA. Sensors. 2014; 14(10):18223-18243.*

**Cit. 81.** de Souza, Alisson CD, and Marcelo AC Fernandes. "Proposta de Implementação Paralela em Ponto Fixo de uma Rede de Funções Radiais de Base para FPGA." *Ist BRICS Countries & 11th CBIC Brazilian Congress on Computational Intelligence, Recife, Brazil, September 8-11, 2013.*

43. **Bakó, L.**, Brassai, S.T., Székely, I., Baczó, M., *Hardware Implementation of Delay-coded Spiking-RBF Neural Network for Unsupervised Clustering*, Proceedings of the 11<sup>th</sup> International Conference on Optimisation of Electrical and Electronic Equipment (OPTIM'08), ISBN9789731310329, pp51-56, Transilvania Univ. of Brasov, 2008, Brasov, **CPCI indexed**.

\* *Independent citations:*

- citations in journals and proceedings indexed by other international databases:

Cit. 82. Evangelos Stomatias, *Developing a supervised training algorithm for limited precision feed-forward spiking neural networks, 107 pages, MSc thesis Microelectronic Systems, 2011, University of Liverpool, supervised by John Marsland*

- citations in other works:

Cit. 83. Hunzinger, J.F., Aparin, V., *Methods and apparatus for spiking neural computation, <http://www.google.com/patents/WO2013119867A1?cl=en>, 2013, Google Patents*

Cit. 84. Chan, V.H., Hunzinger, J.F., Behabadi, B.F., *Method and apparatus for neural temporal coding, learning and recognition, <http://www.google.com/patents/US20130046716>, 2013, Google Patents*

Cit. 85. C. H. Ang, *Delay-Based Pattern Recognition Using Field-Programmable Gate Arrays*, PhD Thesis, The University of Sydney, School of Electrical and Information Engineering, 2013.

44. Brassai Sándor Tihamér, **Bakó László**, Dan Ştefan, *FPGA Parallel Implementation of CMAC Type Neural Network with on Chip Learning*, SACI 2007, Budapest Tech, Hungary, 2007, 111-115, ISBN: 142441234X, **CPCI indexed**.

\* *Independent citations:*

- citations in journals and proceedings indexed by other international databases:

**Cit. 86.** Sheng Rong-ju, Ma Jianwei: *Research Progress of FPGA Hardware Implementation of Artificial Neural Network, Electrical Automation Journal, 2009. No. 5, Shanghai*

*Association of Automation - Shanghai Design Institute of Electric Automation, China, Editor: Huang Jian-Min, ISSN 1000-3886, pp53-54.*

Cit. 87. G. Führ et al., "Automatic Energy-Minimized HW/SW Partitioning for FPGA-Accelerated MPSoCs," in *IEEE Embedded Systems Letters*, vol. 11, no. 3, pp. 93-96, Sept. 2019.

45. **Bakó László**, Brassai Sándor Tihamér, *Hardware spiking neural networks: parallel implementations using FPGAs*, Proceedings of the 8<sup>th</sup> WSEAS Int. Conference on Automatic Control, Modeling and Simulation, Prague, Czech Republic, March 12-14, 2006 (pp261-266), ISBN 960-8457-42-4, ISSN 1790-5117.

\* *Independent citations:*

- citations in journals and proceedings indexed by other international databases:

**Cit. 88.** W. J. Han, S. D. Kim, I. S. Han, *Bio-inspired visual information processing – the neuromorphic approach*, *WSEAS Transactions on Circuits and Systems*, 2010

46. **Bakó László**, Brassai Sándor Tihamér, Iuliu Székely, *Fully Parallel Implementation of Spiking Neural Networks on FPGA*, Proceedings of the 10<sup>th</sup> International Conference on Optimisation of Electrical and Electronic Equipment (OPTIM '06), Braşov (Moeciu), Volume III, pp135-142, ISBN 973-635-705-8, Trasilvania University Press, 2006, **CPCI indexed**.
47. **Bakó László**, Brassai Sándor Tihamér, *Természetazonos felépítésű mesterséges neurális hálózatok hardvare megvalósítása*, Cluj-Napoca, Számokt 2005 Kolozsvár, EMT, P219-230, ISBN: 973-7840-01-1
48. **Bakó László**, Brassai Sándor Tihamér, *Fejlett neuronmodellek szimulációja és megvalósítása*, Számokt 2004 – Cluj-Napoca, EMT, 2004, ISBN:973-86097-8-X, p98-107
49. **Bakó László**, Iuliu Székely, Dávid László, Brassai Sándor Tihamér, *Simulation of Spiking Neural Networks*, Proceedings of the 9<sup>th</sup> International Conference on Optimisation of Electrical and Electronic Equipment (OPTIM '04), ISBN 973-635-285-4, pp179-184, Trasilvania University Press, Braşov, 2004, **CPCI indexed**.

### C. Contracte de cercetare

1. **Domus senior researcher mobility scholarship** at the Budapest University of Technology and Economics, Department of Measurement and Information Systems, funded by the Hungarian Academy of Sciences, for six weeks in 2018, 800 EUR.
2. Postdoctoral Research Scholarship, "Petru Maior" University of Tirgu-Mures, European Social Fund under the responsibility of the Managing Authority for the Sectoral Operational Programme for Human Resources Development, as part of the grant POSDRU/159/1.5/S/133652, 2014-2015 (18 months).
3. Research mobility, Host institution: Bio-Inspired and Reconfigurable Computing research group, Electrical & Electronic Engineering, College of Engineering and Informatics, National University of Ireland, Galway, Ireland, (<http://birc.nuigalway.ie/>), External stage coordinator: Dr. Fearghal Morgan B.Sc., Ph.D., Stage period: 30th of March-26th of April 2015.
4. **Domus senior researcher mobility scholarship** at the Budapest University of Technology and Economics, Department of Control Engineering and Information Technology, funded by the Hungarian Academy of Sciences, for six weeks in 2014, 800 EUR.
5. **Domus senior researcher mobility scholarship** at the Budapest University of Technology and Economics, Department of Control Engineering and Information Technology, funded by the Hungarian Academy of Sciences, for six weeks in 2013, 800 EUR.
6. **Research scholarship**, Hungarian Government, Ministry of Human Resources, 2012-2013, 1650 EUR.
7. Proiectarea și implementarea sistemelor încorporate în timp real cu arhitectură adaptivă, Institutul Programelor de Cercetare – Univ. Sapientia, **Director proiect**, 2013.

8. Eljárások és eszközök kutatása, fejlesztése és gyakorlati alkalmazása neuro-biológiai jelekre épülő rendszerek valós idejű szabályozásában, Conducător: Conf. dr. ing. Márton László-Ferenc, Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2011-2012
9. Sisteme adaptive cu rețele neurale artificiale neuromorfe. Realizări cu dispozitive hardware reconfigurabile, CNCSIS-UEFISCSU (Contract tip TD), **Director proiect**, 2008-2009
10. Implementarea sistemelor neuro-adaptive cu circuite reconfigurabile. Conducător: dr. ing. Brassai S.T., Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2008-2009
11. Implementarea rețelelor neurale cu codarea decalajelor impulsurilor, bazate pe modele neurale hibride de tip RBF-Spiking cu aplicare pentru probleme de clasificare de date, Fundația EuroTrans, **Director proiect**, 2008
12. Metode inteligente pentru prelucrarea digitală și interpretarea semnalelor EKG bazate pe analiza Wawelet, Conducător: Prof. dr. ing. Székely Iuliu, Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2005-2006
13. Optimizarea și aplicarea rețelelor neuronale artificiale neuromorfe în probleme de control Conducător: Prof. dr. ing. Székely Iuliu, Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2004-2005
14. Simularea și utilizarea rețelelor neuronale artificiale neuromorfe, Conducător: Prof. dr. ing. Székely Iuliu, Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2003-2004
15. Modelarea și simularea rețelelor neuronale artificiale neuromorfe, Conducător: Prof. dr. ing. Székely Iuliu, Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2002-2003
16. Obținerea și caracterizarea micro-structurală a depunerilor nanocompozite TiAlN în structura multistrat gradient de compoziție realizate prin pulverizarea reactivă în curent continuu tip magnetron, Conducător: Prof. dr. ing. Dávid László, Institutul Programelor de Cercetare – Fund. Sapientia, *Membreu*, 2001-2002.

#### D. Premii, distincții.

Premiul **“The Best Presenter in Information Technology”** la Conferința The 4<sup>th</sup> International PhD, DLA Symposium, organizat de University of Pécs, Pollack Mihály Faculty of Engineering, Pécs, Ungaria, 20-21 Octombrie 2008.

#### EDITARE DE VOLUME

Domokos, J., **Bakó, L.**, Szilágyi, L., Forgó, Z. (eds.), *Proceedings of the 3<sup>rd</sup> International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics*, Scientia publishing House, Cluj-Napoca, 2011, 378 pag., ISSN 2247 – 0948.

#### J. Citări independente

Numărul total de lucrări este 59 (30 ca prim autor), din care la 16 se cunosc un număr total de 88 citări independente (din care 30 în publicații cotate ISI și 53 în lucrări indexate în BDI).

Hirsch index = 9.

**Data:** 15. septembrie 2019.

Șef lucr. dr. ing. Bakó László