

Europass Curriculum Vitae



Personal information

First name(s) / Surname(s)

Work Address

Telephone(s)

Fax(es)

E-mail

Citizenship

Nationality

Gender

Marital status

László BAKÓ

Țirgu Mureș/Corunca Șoseaua Sighișoarei 1C.

Mail address: 540485, P.O. 9, BOX 4, Țirgu-Mureș, Romania

+40 365 403033 (Office)

+40 265 206211

lbako@ms.sapientia.ro

Webpage: www.ms.sapientia.ro/~lbako

Romanian, Hungarian

Hungarian

Male

Married, two children (aged 11 and 9)

Work experience

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Jan 2001 – March 2002

R&D engineer,

Microcontroller-based, hardware-software design

AAGES S.R.L. Țirgu-Mureș

Industry, production of induction-heating machines

Dates

Occupation or position held

Main activities and responsibilities

Name and address of employer

Type of business or sector

Since Oct 2001

Vice dean (since Sept 2014), Lecturer (since Oct 2006), teaching assistant (Oct 2001 – Sep 2006)

Teaching engineering and computer science students, research

Sapientia University of Cluj Napoca (4, Matei Corvin str, 400112 Cluj Napoca), Faculty of Technical and Human Sciences (Țirgu-Mureș)

Academic education - University

Education and training

Dates

Title of qualification awarded

Name and type of organisation
providing education and training

Jul 2014 – Dec 2015

Postdoctoral Researcher

"Petru Maior" University of Țirgu-Mureș, European Social Fund

Dates

Title of qualification awarded

Principal subjects/occupational skills
covered

Name and type of organisation
providing education and training

Oct 2003 – Nov 2009

PhD (degree awarded in 2010)

Electronics and telecommunications

Transilvania University of Brașov, Romania, Faculty of Electrical Engineering and Computer Science

Dates

Title of qualification awarded

Principal subjects/occupational skills
covered

Name and type of organisation
providing education and training

Oct 1995 – Jul 2000

Five-year electrical engineering education program

Automation and industrial computer science

Petru Maior University of Țirgu Mureș, Romania

Personal skills and competences

Languages

Self-assessment

European level (*)

English

German

Fluent in Hungarian, Romanian and English (Cambridge Certificate in Advanced English)

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2	C2	C1	C1	C2
A1	A2	A1	A1	A1

(*) *Common European Framework of Reference for Languages*

Research areas

Embedded systems, Digital reconfigurable devices, Processor architectures, Hardware-software co-design, Artificial intelligence, Neuromorphic neural networks, Hardware Neural Networks, Multi-core systems, SoC, VLSI systems, RISC microprocessor design using FPGA circuits, Real-time control systems, Industrial communication systems.

Most important publications

1. **Bakó L.**, "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**, 12 independent citations)
2. **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, Akadémiai Kiadó, Budapest, Hungary, ISSN 1788-3911, SJR-SCImago Journal & Country Rank:0,031.
3. 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 0,031.
4. **Bakó L.**, Brassai S.T., "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 0,033, (1 citation).
5. Brassai S.T., **Bakó L.**, "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, (6 independent citations).
6. **Bakó L.**, Székely I., Brassai S.T., "Development of Advanced Neural Models. Software And Hardware Implementation", Timișoara, Transaction on Electronics and communication, Scientific bulletin of the „Politehnica” University of Timișoara, 2004, p214-219, ISSN 15833380 (Cat. B+)
7. Brassai S.T., Dávid L., **Bakó L.**, Hardware Implementation of CMAC based artificial network with process control application, Timișoara, Transaction on Electronics and communication, Scientific bulletin of the „Politehnica” University of Timișoara, 2004, p209-213, ISSN 1583-3380 (Cat. B+)
8. **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, ISI proceedings, (2 independent citation).
9. **Bakó, L.**, Brassai, S.T., Székely, I., Baczó, M., Hardware Implementation of Delay-coded Spiking-RBF Neural Network for Unsupervised Clustering, Proceedings of the 11th International Conference on Optimization of Electrical and Electronic Equipment, ISBN9789731310329, pp51-56, Transilvania Univ. of Brasov, 2008, Brasov, ISI proc. (1 independent citation)
10. Brassai, S.T., **Bakó, L.**, Székely, I., Dan, Ș., "Neural Control Based on RBF Network implemented on FPGA" Proceedings of the 11th International Conference on Optimization of Electrical and Electronic Equipment (OPTIM '08) , ISBN 978-973-131-032-9, pp41-46, Transilvania University of Brasov, Brașov, 2008, ISI proceedings. 9. (3 independent citations)

Bakó László

11. Brassai S.T., **Bakó L.**, Dan Ş., FPGA Parallel Implementation of CMAC Type Neural Network with on Chip Learning, SACI 2007, Budapest Tech, Hungary, 2007, 111-115, ISBN: 142441234X, ISI proceedings, (1 independent citation).
12. **Bakó L.**, Brassai S.T., Székely I., Fully Parallel Implementation of Spiking Neural Networks on FPGA, Proceedings of the 10th International Conference on Optimization of Electrical and Electronic Equipment, Braşov (Moeciu), Volume III, pp135-142, ISBN 973-635-705-8, Trasilvania University Press, 2006, ISI proceedings.
13. **Bakó L.**, Brassai S.T., Hardware spiking neural networks: parallel implementations using FPGAs, Proceedings of the 8th WSEAS Int. Conference on Automatic Control, Modeling and Simulation, Prague, Czech Republic, March 12-14, 2006 (pp. 261-266), ISBN 960-8457-42-4, ISSN 1790-5117, (1 independent citation).
14. **Bakó L.**, Székely, I., „Challenges for implementations of delay-coded neuromorphic neural networks on embedded digital hardware”, 2nd INCF Congress of Neuroinformatics, Pilsen, Czech Republic, September 6-8, 2009, Abstract book, p132-133.
15. **Bakó L.**, Fülöp 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.
16. **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.
17. 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.
18. 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, 8th Forum of Neuroscience (FENS), July 14-18, 2012, Barcelona, Spain.
19. **Bako, 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*)
20. **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.
21. 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.
22. **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>
23. **L. Bakó**, F. Morgan, Sz. Hajdú, S.-T. Brassai, R. Moni, C. Enăchescu, Development and Embedded Implementations of a Hardware-Efficient Optical Flow Detection Method, Acta Universitatis Sapientiae, Electrical and Mechanical Engineering, 6 (2014) 5–19.
24. 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”, 24th Irish Conference on Artificial Intelligence and Cognitive Science, University College Dublin, September 20-21 2016. ([PDF](#))

Independent citations

total number of publications: 55

Total number of known independent citations: 53

Hirsch index: 5

Most important research grants

1. **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.
2. **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: March - April 2015.
3. **Domus Hungarica 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.
4. **Domus Hungarica 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.
5. **Research scholarship**, Hungarian Government, Ministry of Human Resources, 2012-2013, 1650 EUR.
6. Design and implementation of real-time embedded systems with architectural adaptability, **Project manager**, Research Institute of the Sapientia Foundation, 2013, 1000 EUR.
7. Hardware implementations of adaptive artificial neuromorphic neural network systems using reconfigurable devices, CNCSIS-UEFISCSU Romania (TD-84/2008), **Project leader**, 7700EUR, 2008-2009.
8. Implementing neuro-adaptive systems on reconfigurable circuits, Research Institute of the Sapientia Foundation, Romania, **Member**, Leader: dr.ing. Brassai S.T., 2000EUR, 2008-2009.
9. Implementation of delay-coded neural networks, based on hybrid RBF-Spiking models, applied in dataset classifications, EuroTrans Foundation, Romania, **Project leader**, 500EUR, 2008.
10. Optimization of Hardware-implemented Spiking Artificial Neural Networks and Their Use in Control Applications, Research Institute of the Sapientia Foundation, Romania, **Member**, Leader: Prof. dr. ing. Iuliu Székely, 4100EUR, 2004-2005.
11. Simulation and application of Spiking Artificial neural networks, Research Institute of the Sapientia Foundation, Romania, **Member**, Leader: Prof.dr. Iuliu Székely, 1200EUR, 2003-2004.
12. Modeling and simulation of neuromorphic artificial neuronal networks, Research Institute of the Sapientia Foundation, **Member**, Leader: Prof. dr. ing. Iuliu Székely, 2000EUR, 2002-2003.

Society memberships

- Member of the Romanian Society of Control Engineering and Technical Informatics (SRAIT), an IFAC Romanian National Member Organization
- Member of the Transylvanian Hungarian Technical Scientific Community (EMT)
- External member in the public body of the Hungarian Academy of Sciences (MTA-KAB)

Reviewer activity

Actively reviewing manuscripts for the following journals:

- IEEE Transactions on Neural Networks and Learning Systems,
- Briefings in Bioinformatics, Oxford Journals.

Prizes

"The Best Presenter in Information Technology" award at The 4th International PhD, DLA Symposium, organized by the University of Pécs, Pollack Mihály Faculty of Engineering, Pécs, Hungary, 20-21 October 2008.

Teaching activities

Taught subjects:

- Computer architectures
- Computer peripherals and interfaces
- SCADA and industrial communication systems
- Embedded system design
- Digital electronics
- Electronic CAD

Driving licence

B category since 1995

LIST OF SCIENTIFIC PUBLICATIONS

Last name, First name: Bakó, László

A. PhD Thesis

- ▲ “Transilvania” University of Braşov, Romania,
Faculty of Electrical Engineering and Computer Science,
- ▲ Fundamental domain: Engineering Sciences,
Specific domain: Electronic and Telecommunications Engineering,
- ▲ Title of thesis: “**Hardware Implementations of Adaptive Artificial Neuromorphic Neural Network Systems using Reconfigurable Devices**”,
- ▲ Scientific coordinator: Prof. dr. eng. Iuliu SZÉKELY, PhD

B. Published Scientific works

The *total number of publications* is 55 (29 as first or single author) with 10 of these yielding a number of **53 known independent citations** (16 citations in ISI indexed journals or in CPCI indexed proceedings and 37 citations in journals and proceedings indexed by other international databases, theses and patents).

Hirsch index = 5

B1. Articles published in ISI indexed journals

- 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)**

* Independent citations:

- citations in ISI indexed journals or in CPCI indexed 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 Kasabov. *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, Snaidier 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

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

- Cit. 8. 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. 9. Seamus Cawley, Fearghal Morgan, Brian McGinley, Sandeep Pande, Liam McDaid, Snaidar 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. 10. 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. 11. Rumbell, Timothy, *Self Organisation and Hierarchical Concept Representation in Networks of Spiking Neurons*, University of Plymouth, UK, Phd Thesis, 2013.
- 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.
- 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. 13. 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. 14. 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. 15. 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. 16. 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. 17. 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. 18. Mehra 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. 19. 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. 20. 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. Articles published in journals indexed in other international databases

1. L. Bakó, F. Morgan, Sz. Hajdú, S.-T. Brassai, R. Moni, C. Enăchescu, *Development and Embedded Implementations of a Hardware-Efficient Optical Flow Detection Method*, *Acta Universitatis Sapientiae, Electrical and Mechanical Engineering*, 6 (2014) 5–19.
2. S. T. Brassai, L. Bakó, L. Losonczi *Assistive Technologies for Visually Impaired People*, *Acta Universitatis Sapientiae, Electrical and Mechanical Engineering*, 3 (2011) pp. 39–50 (EBSCO databases).

- Cit. 21. 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. 22. 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. 23. 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. 24. 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
- Cit. 25. 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. 26. 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. 27. Adagale, Vaishali, and Sanjivani Mahajan. "ROUTE GUIDANCE SYSTEM FOR BLIND PEOPLE USING GPS AND GSM." (2015).
- Cit. 28. 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. 29. 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.
3. **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.
4. 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 (Dec.2009), Akadémiai Kiadó, Budapest, Hungary, ISSN 1788-3911, SJR-SCImago Journal & Country Rank: 0,031.
5. **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. 30. 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. 31. Perez-Peña, Fernando; Morgado-Estévez, 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. 32. 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:

B3. Articles published in international journals (others than those previously mentioned).

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. Articles published in national journals and conference proceedings

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
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 Timișoara, 2004, p209-213, ISSN 1583-3380
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. Papers published in conference proceedings

1. 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”, 24th 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)
2. **László BAKÓ**, Călin ENĂCHESCU, "Challenges in the embedded implementation optical flow computation,, , 2nd 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.
3. **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 <http://dx.doi.org/10.1016/j.protcy.2016.01.066>.
4. **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.
5. **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 6th International Carpathian Control Conference (ICCC), Szilvásvárad, Hungary, May 27-30, IEEE 978-1-4799-7370-5/15, 2015, pp.13-18.
6. 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.
7. **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.
8. 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. 33. 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. 34. Paul, Sananda; Mazumder, Ankita; Ghosh, Poulami; Tibarewala, D.N.; Vimalarani, G., "EEG based emotion recognition system using MFDFA 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. 35. 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*
 9. 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. 36. Borowicz, Adam. "WARPED S-TRANSFORM FOR ANALYSING THE BRAIN WAVES.", Advances in Computer Science Research, vol. 11, pp. 5-16, 2014.
 10. **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>
 11. **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. 37. 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.
 12. 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.
 13. 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.*
 14. 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.*
 15. **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.
16. 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, 8th Forum of Neuroscience (FENS), July 14-18, 2012, Barcelona, Spain.
 17. **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.
 18. 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. 38. 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).
19. 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.
 20. 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.
 21. 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.
 22. 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.
 23. **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.
 24. Brassai, S.T., **Bakó, L.**, Márton, L.F., „Parallelization Techniques for BCI Signal Computation", *Proceedings of the 3rd 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.
 25. **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.
 26. 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.
 27. **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.

28. 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, ICCC 2010, May 26-28, 2010, Eger, Hungary, ISBN 978-963-06-9289-2, pp. 231-234.
 29. **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.
 30. **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. 39. 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. 40. 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.
31. **Bakó, L.**, Székely, I., „Challenges for implementations of delay-coded neuromorphic neural networks on embedded digital hardware”, 2nd INCF Congress of Neuroinformatics, Pilsen, Czech Republic, September 6-8, 2009, Abstract book, p132-133.
 32. **Bakó, L.**, „Partially Serialized Computation in Networks of Pulse-based Artificial Neurons”, 1st 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.
 33. 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.
 34. **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.
 35. Brassai S. T., **L. Bakó**, „Mobilis robot mesterséges idegsejt hálózattal való szabályozása pályakövetési feladatokra”, Enelko-SzámOkt 2008, Sumuleu-Ciuc, EMT Cluj-Napoca, 2008, ISSN: 1842-4546, p116-121
 36. 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
 37. 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.

38. Brassai, S.T., **Bakó, L.**, Pana, G., Dan, Șt., "Neural Control Based on RBF Network implemented on FPGA" Proceedings of the 11th International Conference on Optimisation of Electrical and Electronic Equipment (OPTIM'08), ISBN 978-973-131-032-9, pp41-46, Transilvania University of Brasov, Brașov, 2008, **CPCI indexed**.

* Independent citations:

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

- Cit. 41. 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. 42. 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. 43. 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](https://doi.org/10.1109/ICIECS.2010.5677694)
- Cit. 44. Elitas, M.; Yavuz, O.; Erkmén, 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](https://doi.org/10.1109/INES.2012.6249818).
- Cit. 45. 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. 46. 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. 47. 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." 1st BRICS Countries & 11th CBIC Brazilian Congress on Computational Intelligence, Recife, Brazil, September 8-11, 2013.

39. **Bakó, L.**, Brassai, S.T., Székely, I., Baczó, M., *Hardware Implementation of Delay-coded Spiking-RBF Neural Network for Unsupervised Clustering*, Proceedings of the 11th 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. 48. 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. 49. Hunzinger, J.F., Aparin, V., *Methods and apparatus for spiking neural computation*, <http://www.google.com/patents/WO2013119867A1?cl=en>, 2013, Google Patents
- Cit. 50. 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. 51. 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.

40. Brassai Sándor Tihamér, **Bakó László**, Dan Ștefan, *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. 52. 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.

- 41. Bakó László**, Brassai Sándor Tihamér, *Hardware spiking neural networks: parallel implementations using FPGAs*, Proceedings of the 8th 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. 53. W. J. Han, S. D. Kim, I. S. Han, *Bio-inspired visual information processing – the neuromorphic approach*, *WSEAS Transactions on Circuits and Systems*, 2010

- 42. Bakó László**, Brassai Sándor Tihamér, Iuliu Székely, *Fully Parallel Implementation of Spiking Neural Networks on FPGA*, Proceedings of the 10th 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**.
- 43. 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
- 44. Bakó László**, Brassai Sándor Tihamér, *Fejlett neuronmodellek szimulációja és megvalósítása*, Számokt 2004 – Cluj-Napoca, EMT, 2004, ISBN:973-86097-8-X, p98-107
- 45. Bakó László**, Iuliu Székely, Dávid László, Brassai Sándor Tihamér, *Simulation of Spiking Neural Networks*, Proceedings of the 9th 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. Research grants (project title, **Status**, [name of project manager-PM], funded by, period, budget)

1. *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).
2. *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.
3. *Domus Hungarica 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.
4. *Domus Hungarica 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.
5. *Research scholarship*, Hungarian Government, Ministry of Human Resources, 2012-2013, 1650 EUR.
6. *Design and implementation of real-time embedded systems with architectural adaptability*, **Project manager**, Research Institute of the Sapientia Foundation, 2013, 1000 EUR.
7. *Research and development of proceedings and instrumentation used in real time system control, based on neurobiological signals*, **Member**, [PM: dr. eng. Márton László-Ferenc], Research Institute of the Sapientia Foundation, 2011-2012, 5000 EUR.

8. *Real-time classification of datasets with hardware embedded neuromorphic neural networks*, **Project manager**, The National University Research Council - CNCSIS-UEFISCSU (TD grant), 2008-2009, Budget: 7700 EUR.
9. *Implementation neuro-adaptive systems on reconfigurable circuits*, **Member**, [PM: dr.ing. Brassai S.T.], Research Institute of the Sapientia Foundation, 2008-2009.
10. *Implementation of delay-coded neural networks, based on hybrid RBF-Spiking models, applied in dataset classifications*, **Project manager**, EuroTrans Foundation, Project leader, 500EUR, 2008.
11. *Intelligent methods for the digital processing and Wavelet-based analysis of EKG signals*, **Member**, [PM: Prof. dr. ing. Iuliu Székely], Research Institute of the Sapientia Foundation, 2005-2006.
12. *Optimization of Hardware-implemented Spiking Artificial Neural Networks and Their Use in Control Applications*, **Member**, [PM: Prof. dr. ing. Iuliu Székely], Research Institute of the Sapientia Foundation, 2004-2005, 4100EUR.
13. *Simulation and application of Spiking Artificial neural networks*, **Member**, [PM: Prof. dr. ing. Iuliu Székely], Research Institute of the Sapientia Foundation, 2003-2004, 1200 EUR.
14. *Modeling and simulation of neuromorphic artificial neuronal networks*, **Member**, [PM: Prof. dr. ing. Iuliu Székely], Research Institute of the Sapientia Foundation, 2002-2003, 2000 EUR.
15. *Development and micro-structural analysis of TiAlN thin films deposited using DC current magnetron sputtering process*, **Member**, [PM: Prof. dr. ing. Dávid László], Research Institute of the Sapientia Foundation, 2001-2002.

D. AWARDS

"The Best Presenter in Information Technology" Award at The 4th International PhD, DLA Symposium, organized by the University of Pécs, Pollack Mihály Faculty of Engineering, Pécs, Hungary, 20-21 October 2008.

E. Editorial activities

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

Date: 19th of September 2016.

Bakó László