Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)	**László BAKÓ**
Address(es)	7 Mărăști str., 540328, Tirgu-Mures, Romania
Telephone(s)	+40 365 403033 (Office) Mobile: +40 744 221608
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E-mail	lbako@ms.sapientia.ro Webpage: www.ms.sapientia.ro\~lbako
Citizenship	Romanian
Nationality	Hungarian
Gender	male
Marital status	Married, two children (aged 7 and 5)

Work experience

Dates	Jan 2001 – March 2002
Occupation or position held	R&D engineer,
Main activities and responsibilities	Microcontroller-based, hardware-software design
Name and address of employer	AAGES S.R.L. Tîrgu-Mureş
Type of business or sector	Industry, production of induction-heating machines

Dates	Since Oct 2001
Occupation or position held	Lecturer (since Oct 2006), teaching assistant (Oct 2001 – Sep 2006)
Main activities and responsibilities	Teaching electrical engineering and computer science students, research
Name and address of employer	Sapientia Foundation - Sapientia University of Cluj Napoca (4, Matei Corvin str, 400112 Cluj Napoca), Faculty of Technical and Human Sciences
Type of business or sector	Academic education - University

Education and training

Dates	Oct 2003 – Nov 2009
Title of qualification awarded	PhD (degree awarded in 2010)
Principal subjects/occupational skills covered	Electronics and telecommunications
Name and type of organisation providing education and training	Transilvania University of Braşov, Romania, Faculty of Electrical Engineering and Computer Science

Dates	Oct 1995 – Jul 2000
Title of qualification awarded	Five-year electrical engineering education program
Principal subjects/occupational skills covered	Automation and industrial computer science
Name and type of organisation providing education and training	Petru Maior University of Tîrgu Mureș, Romania

Personal skills and competences

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

Other language(s)

Self-assessment	Understanding		Speaking		Writing
European level (*)	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
German	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: 9.283**, 6 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 citations).
6. **Bakó L.**, Székely I., Brassai S.T., "Development of Advanced Neural Models. Software And Hardware Implementation", Timişoara, Transaction on Electronics and communication, Scientific buletin of the „Politehnica" University of Timişoara, 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, Timişoara, Transaction on Electronics and communication, Scientific buletin of the „Politehnica" University of Timisoara, 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, (1 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 citation)
10. Brassai, S.T., **Bakó, L.**, Székely, I., Dan, Ş., "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, Braşov, 2008, ISI proceedings.

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 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 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.

Independent citations

Total number of known independent citations: 18

Most important research projects

1. Hardware implementations of adaptive artificial neuromorphic neural network systems using reconfigurable devices, CNCSIS-UEFISCSU Romania (TD-84/2008), **Project leader**, 7700EUR, 2008-2009.
2. Implementing neuro-adaptive systems on reconfigurable circuits, Research Institute of the Sapientia Foundation, Romania, **Member**, lead by dr.ing. Brassai S.T., 2000EUR, 2008-2009.
3. Implementation of delay-coded neural networks, based on hybrid RBF-Spiking models, applied in dataset classifications, EuroTrans Foundation, Romania, **Project leader**, 500EUR, 2008.
4. 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.
5. Simulation and application of Spiking Artificial neural networks, Research Institute of the Sapientia Foundation, Romania, **Member**, Leader: Prof.dr. Iuliu Székely, 1200EUR, 2003-2004.
6. 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

Reviewing manuscripts for the journals:
- IEEE Transactions on Neural Networks,
- Briefings in Bioinformatics, Oxford Journals,
- Far East Journal of Experimental and Theoretical Artificial Intelligence

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
- Digital electronics
- Electronic CAD

Driving licence

B category since 1995