Ádám Rák

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Interdisciplinary Technical Sciences Doctoral

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| Citizenship | Hungarian |
| Research Interests | Many processor systems, CNN, Computer Aided design, Machine Learning |
| education | Pázmány Péter Catholic University, Hungary  Ph.D., Interdisciplinary Technical Sciences Doctoral School 2009-   * Area of Study: Automatic paralellization on hybrid many processor architectures * Advisors: Professor Tamás Roska; György Cserey, Ph.D. |
|  | Pázmány Péter Catholic University, Hungary  M.S., Faculty of Information Technology 2004-2009   * Thesis Topic: Stochastic bitstream-based CNN and its implementation on FPGA * Advisors: György Cserey, Ph.D. |
| awards | Pázmány Péter Catholic University, Hungary   * III. prize, XXVIII. National Scientific Student Conference, Technical section,   2007. Supervisors: György Cserey, Ph.D.   * II. prize, XXIX. National Scientific Student Conference, Information Technology   section, 2009. Supervisors: György Cserey, Ph.D.   * III. prize, XXIX. National Scientific Student Conference, Technical section, 2009.   Supervisors: György Cserey, Ph.D. |
| academic experience | Pázmány Péter Catholic University, Hungary  2009- teaching assistant   * Introduction to FPGA and GPU programming |
| professional experience | StreamNovation Ltd., Hungary  *Founder / Senior R&D developer* 2009-   * R&D activities in the field of quantum chemistry and GPU implementation |
| technical skills | Programming: C, C++, Pascal, VHDL, Java, OpenCL  FPGA and GPU programming  Instrumentation and Control:Microchip hardware and software |
| language knowledge | Hungarian: native  English: intermediate language exam, active knowledge |
| journal publications | A. Rák and G. Cserey, “Macromodeling of the memristor in SPICE," *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems,* vol. 29, no. 4, pp. 632-636, 2010.  A. Rák, G. Gandhi and G. Cserey, “Chua's circuit topology evolution using genetic algorithm," *International Journal of Bifurcation and Chaos*, vol. 20, no. 3, pp. 687-696, 2010.  G. B. Soós, and A. Rák, and J. Veres and G. Cserey, “GPU Boosted CNN Simulator Library for Graphical Flow-Based Programmability", *EURASIP Journal on Advances in Signal Processing*, 2009  A. Rák, G. B. Soós and Gy. Cserey, “Stochastic bitstream based CNN and its implementation on FPGA," *International Journal of Circuit Theory and Applications*, Vol 37 (4), pp 587-612 2009. |
| international conference publications | G. Cserey, A. Rák, B. Jákli and T. Prodromakis, “Cellular neural networks with memristive cell devices," *in Proceedings of 17th IEEE International Conference on Electronics, Circuits, and Systems, ICECS 2010, (Athens, Greece),* pp. 938-941, Dec. 2010.  A. Rák, G. Feldhoffer, G. B. Soós and G. Cserey, “Standard C++ Compiling to GPU with Lambda Functions," *in Proceedings of 2010 International Symposium on Nonlinear Theory and its Applications (NOLTA 2010), (Krakow, Poland),* 2010.  A. Rák, G. Feldhoffer, G. B. Soós and G. Cserey, “Standard C++ compiling to GPU,” *in 3rd Hungarian-Singaporean Workshop on Systems Biology and Communication Systems,* (Budapest, Hungary), 2010.  A. Rák, G. Feldhoffer, G. B. Soós and G. Cserey, “CPUGPU hybrid compiling for general purpose: Case studies,” *in Proceedings of 12th International Workshop on Cellular Neural Networks and their Applications, CNNA 2010, (Berkeley, USA),* Feb. 2010.  G. J. Tornai, Gy. Cserey and A. Rák, “ Spatial-temporal level set algorithms on CNN-UM,” *in Proceedings of 2008 International Symposium on Nonlinear Theory and its Applications, NOLTA 2008, (Budapest, Hungary),* 2008.  G. B. Soós, J. Veres, A. Rák and Gy. Cserey, “ GPU powered CNN simulator (SIMCNN) with graphical ow based programmability,” *in Proceedings of 11th International Workshop on Cellular Neural Networks and their Applications, CNNA 2008, (Santiago de Compostela, Spain)*, 2008. |
| other publications | A. Rák, G. Feldhoffer, G. Soós, T. Höltzl, B. Oroszi and G. Cserey, "Eljárás és rendszer integrál kiszámításának párhuzamos architektúra szálára való leképezésére." *Hungarian and PCT patent,* 2012. 2013.  G. Cserey and A. Rák, "High accuracy time-to-digital converter on FPGA." *Hungarian patent*, 2009.  A. Rák and G. Cserey, "Computer architecture and processing procedure." *Hungarian patent*, 2012.  A. Rák, G. Cserey and B. Jákli, "Device and method for determining timing of a measured signal" *PCT patent*, 2013. |