Zalán Péter BODÓ, Ph.D.

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[Updated: September 23, 2023]

Citizenship: Romanian

Date of Birth: 16th of February, 1981

Place of Birth: Satu Mare (Szatmárnémeti), Romania

Working positions:

October 2022–present: Vice Dean, Faculty of Mathematics and Computer Science, Babeş–Bolyai University, Cluj-Napoca

2017–present: Associate Professor, Faculty of Mathematics and Computer Science, Department of Mathematics and Computer Science of the Hungarian Line, Babeş–Bolyai University, Cluj-Napoca

January 2017–June 2018: Research Associate, Deep Computational Intelligence group, Romanian Institute of Science and Technology (RIST), Cluj-Napoca

2011–2017: Lecturer/Assistant Professor, Faculty of Mathematics and Computer Science, Department of Mathematics and Computer Science of the Hungarian Line, Babeş–Bolyai University, Cluj-Napoca

2008–2011: Teaching Assistant, Faculty of Mathematics and Computer Science, Department of Mathematics and Computer Science of the Hungarian Line, Babeş–Bolyai University, Cluj-Napoca

Education:

Ph.D., Faculty of Mathematics and Computer Science, Babeş–Bolyai University, Cluj-Napoca. Supervisor: Dr. Prof. Zoltán Kása, 2005–2009.

Master of Science Degree (Intelligent Systems), Faculty of Mathematics and Computer Science, Babeş–Bolyai University, Cluj-Napoca, Romania, 2003–2004.

Bachelor of Science Degree, Faculty of Mathematics and Computer Science, Babeş–Bolyai University, Cluj-Napoca, Romania, 1999–2003.

Languages:

Hungarian (mother tongue)

Romanian (fluent)

English (fluent)

German (beginner)

Research memberships, grants:

2005–present: Member of the DataMin research group (website: https://datam1n.github.io/)

2022 september–: Bosch–UBB research project "Inteligenţă Artificială (IA) explicabilă pentru sisteme de conducere automată" (*Explainable Artificial Intelligence (AI) for automated driving systems*)

2023: MTA (Hungarian Academy of Sciences) Domus grant coordinator, title: Magyar könnyűzenei dalszövegek elemzése statisztikai természetesnyelv-feldolgozási módszerekkel (*Analyzing Hungarian popular music lyrics using statistical natural language processing methods*), grant ID 91/22/2023/HTMT.

2022: MTA (Hungarian Academy of Sciences) Domus grant coordinator, title: Adatbányászati módszerek a víruselemzésben (*Data mining methods in malware analysis*), grant ID 86/18/2022/HTMT.

2017–2018: POC (Competitiveness Operational Programme of the European Regional Development Fund and the Romanian Government, 2014–2020) project member, title: Dezvoltare automată de software prin abstractizare în modele computaţionale profunde, distribuite (AutoWare), project ID P_37_679, MySMIS code 103319, contract no. 157/16.12.2016.

2012–2016: PCCA project member, title: Metode de îmbunătăţire a evaluării cercetării prin analiza reţelelor ştiinţifice, project code: PN-II-PT-PCCA-2011-3.2-0895

2011–2014: CNCSIS-TE, project member, title: Non-parametric methods in machine learning: application to robotics and data analysis (Metode neparametrice în instruirea automată a maşinilor: aplicaţii în robotică şi analiza datelor), project code: PN-II-RU-TE-2011-3-0278

2007–2011: CNMP project member, title: Automated robotic control using spiking neural networks (Metode de control al roboţilor autonomi folosind reţele neuronale cu pulsuri), project code: NEUROBOT 11-039/10.04.2007

2007–2008: CNCSIS-TD project coordinator, title: Learning Machines in Text Categorization (Maşini de învăţare în categorizarea documentelor), project code: TD-35, contract no.: 485/1.10.2007

2005–2006: Applied research assistant in the frame of the Language Miner (Nyelvbányász) project for the Omega Consulting Ltd., Hungary (5 months).

2003–2004: Member of Sapientia Research Group on topic Fractal Functions and Its Applications. Research coordinator: dr. Anna Soós.

Prizes, awards:

2022: Award for Scientific Excellence, Regional Committee in Cluj of the MTA (Hungarian Academy of Sciences).

2016: Prize for Excellence in Teaching, Faculty of Mathematics and Computer Science, Babeş–Bolyai University.

2013: Prize for Excellence in Teaching, Faculty of Mathematics and Computer Science, Babeş–Bolyai University.

2010: Active Learning Challenge Award Presented to Zalán Bodó, Zsolt Minier & Lehel Csató – First Place on the Document Classification Task (dataset D), Active Learning and Experimental Design Workshop, May 16, 2010, Sardinia, Italy.

Mobilities:

June 2016: 1 week ERASMUS teaching mobility grant, Derby, UK.
March 2012: 1 month CEEPUS mobility grant, Szeged, Hungary.
July 2011: 1 month CEEPUS mobility grant, Plovdiv, Bulgaria.
July 2009: 1 month CEEPUS mobility grant, Plovdiv, Bulgaria.
March 2008: 1 month CEEPUS mobility grant, Budapest, Hungary.
March 2007: 1 month CEEPUS mobility grant, Szeged, Hungary.
March 2005–May 2005: 3 months CEEPUS mobility grant, Debrecen, Hungary.
March 2004–June 2004: 4 months Socrates mobility grant, Linz, Austria.
March 2003: 1 month CEEPUS mobility grant, Szeged, Hungary.

BSc thesis:

Fraktál alapú képtömörítés (Fractal image compression), 2003
Scientific Advisor: Anna Soós

MSc thesis:

Parallel fractal image compression, 2004
Scientific Advisor: Anna Soós

PhD thesis:

Semi-supervised learning with kernels, 2009
Scientific Advisor: Zoltán Kása

Publications:

2023

Adél Bajcsi, Anna Bajcsi, Szabolcs Pável, Ábel Portik, Csanád Sándor, Annamária Szenkovits, Orsolya Vas, Zalán Bodó, Lehel Csató. Comparative Study of Interpretable Image Classification Models. Infocommunications Journal, Special Issue on Applied Informatics, 2023, pp. 20–26.

Gergő Galiger, Zalán Bodó. Explainable patch-level histopathology tissue type detection with bag-of-local-features models and data augmentation. Acta Univ. Sapientiae Informatica 15, 1 (2023) 60–80.

Zalán Bodó, Lehel Csató. Code optimization with vectorization in data mining and machine learning. SusTrainable: Promoting Sustainability as a Fundamental Driver in Software Development Training and Education, 2nd Teacher Training, January 23–27, 2023, Juraj Dobrila University of Pula, Croatia, Revised lecture notes, 2023, pp. 2–6.

2022

Attila Mester, Zalán Bodó. Malware classification based on graph convolutional neural networks and static call graph features. IEA/AIE 2022: Advances and Trends in Artificial Intelligence. Theory and Practices in Artificial Intelligence, pp. 528-539, Springer, Cham.

Anna Bajcsi, Barbara Botos, Péter Bajkó, Zalán Bodó. Can you guess the title? Generating emoji sequences for movies. Studia Universitatis Babeş–Bolyai Informatica, Vol. LXVII, Number 1, 2022, pp. 5–20.

2021

László Antal, Zalán Bodó. Feature axes orthogonalization in semantic face editing. In proceedings of ICCP 2021 (IEEE 17th International Conference on Intelligent Computer Communication and Processing) October 28-30, 2021, Cluj-Napoca, Romania (online event), pp. 163–169, DOI: 10.1109/ICCP53602.2021.9733549.

Attila Mester, Zalán Bodó. Validating static call graph-based malware signatures using community detection methods. In proceedings of ESANN 2021 (29th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning), 6-8 October 2021, Bruges, Belgium (online event), pp. 429–434.

Mihály Gencsi, Zalán Bodó, Annamária Szenkovits. Compilation and Validation of a Large Fake News Dataset in Hungarian. In proceedings of SISY 2021 (IEEE 19th International Symposium on Intelligent Systems and Informatics), September 16-18, 2021, Subotica, Serbia (online event), pp. 125–130.

Zalán Bodó. Fake news detection without external knowledge. In Proceedings of the International Conference on Modelling and Development of Intelligent Systems (MDIS) 2020, Communications in Computer and Information Science series (CCIS), volume 1341, pages 202–221, Springer International Publishing, 2021.

2019

Anna Kiss, Csaba Sulyok, Zalán Bodó. Region Prediction from Hungarian Folk Music Using Convolutional Neural Networks. International Conference on Artificial Neural Networks (ICANN), Lecture Notes in Computer Science, vol. 11730, Springer, Cham, 2019, pp. 581–594.

Csaba Sulyok, Christopher Harte, Zalán Bodó. On the Impact of Domain-specific Knowledge in Evolutionary Music Composition. Proceedings of the Genetic and Evolutionary Computation Conference (GECCO), 2019, pp. 188–197.

Zalán Bodó. A CiteSeerX-based dataset for record linkage and metadata extraction. Proceedings of the 2018 20th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2018, Timisoara, Romania, 20–23 September 2018), pp. 230–236, IEEE, 2019.

2018

Zalán Bodó, Eszter Szilágyi. Connecting the Last.fm Dataset to LyricWikia and MusicBrainz. Lyrics-based Experiments in Genre Classification. Submitted to Acta Universitatis Sapientiae, Informatica, 2018.

2017

Zalán Bodó, Bipin Indurkhya. Software categorization using low-level distributional features. New Trends in Intelligent Software Methodologies, Tools and Techniques. (Proceedings of the 16th International Conference on Intelligent Software Methodologies, Tools, and Techniques, September 26–28, Kitakyushu, Japan.) Frontiers in Artificial Intelligence and Applications, vol. 297, IOS Press, 2017, pp. 88–98.

Zalán Bodó, Lehel Csató. A hybrid approach for scholarly information extraction. Studia Universitatis Babeş–Bolyai Informatica, Vol. 62, No. 2, 2017, pp. 5–16.

2015

Zalán Bodó, Lehel Csató. A note on label propagation for semi-supervised learning. Acta Universitatis Sapientiae, Vol. 7, No. 1, 2015, pp. 18–30.

2014

Zalán Bodó, Lehel Csató. Linear Spectral Hashing. Neurocomputing, Volume 141, 2 October 2014, pp. 117–123.

Zalán Bodó, Lehel Csató. Augmented hashing for semi-supervised scenarios. In Proceedings of the 22th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, 2014, pp. 53–58.

Zalán Bodó. Gépi tanulás gráfokkal. Tíz éves az ELTE Eötvös József Collegium Informatikai Műhelye, Eötvös József Collegium, Budapest, 2014, pp. 61–78.

2013

Zalán Bodó, Lehel Csató. Linear Spectral Hashing. In Proceedings of the 21th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, 2013, pp. 303–308.

2012

Zalán Bodó, Lehel Csató. Improving Kernel Locality-Sensitive Hashing Using Pre-Images and Bounds. In Proceedings of IJCNN, 2012, pp. 2710–2717.

Zalán Bodó, Zsolt Minier, Lehel Csató. Active Learning with Clustering. Active Learning Challenge: Challenges in Machine Learning, Volume 6, Microtome Publishing, 2012, pp. 141–154.

2011

Zalán Bodó, Zsolt Minier, Lehel Csató. Active Learning with Clustering. JMLR Workshop and Conference Proceedings: Volume 16, (Active Learning and Experimental Design workshop, May 16, 2010, Sardinia, Italy) 2011, pp. 127–139.

2010

Zalán Bodó, Lehel Csató. Hierarchical and Reweighting Cluster Kernels for Semi-Supervised Learning. Int. J. of Computers, Communications & Control, Vol. V (2010), No. 4, pp. 469–476.

2009

Zalán Bodó, Zsolt Minier. Semi-supervised Feature Selection with SVMs. In Proceedings of the 2nd 'Knowledge Engineering: Principles and Techniques' Conference, Cluj-Napoca, Romania, 2009, pp. 159–162.

Lehel Csató, Zalán Bodó. Decomposition Methods for Label Propagation. In Proceedings of the 2nd 'Knowledge Engineering: Principles and Techniques' Conference, Cluj-Napoca, Romania, 2009, pp. 127–130.

2008

Zalán Bodó. Hierarchical cluster kernels for supervised and semi-supervised learning. In Proceedings of the IEEE 4nd International Conference on Intelligent Computer Communication and Processing, Cluj-Napoca, Romania, 2008, pp. 9–16.

Zalán Bodó, Zsolt Minier. On Supervised and Semi-Supervised K-Nearest Neighbor Algorithms. Presented at the 7th Joint Conference on Mathematics and Computer Science, Cluj-Napoca, Romania, 2008; appeared in STUDIA UNIV. BABEŞ–BOLYAI, INFORMATICA, Volume LIII, Number 2, Cluj-Napoca, 2008, pp. 79–92.

2007

Zalán Bodó, Zsolt Minier, Lehel Csató. Text Categorization Experiments Using Wikipedia. In Proceedings of the 1st 'Knowledge Engineering: Principles and Techniques' Conference, Cluj-Napoca, Romania, 2007, pp. 66–72

Zsolt Minier, Zalán Bodó, Lehel Csató. Wikipedia-based Kernels for Text Categorization. Proceedings of the 9th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, Timişoara, Romania, 2007, pp. 157–164

2006

Zsolt Minier, Zalán Bodó, Lehel Csató. Segmentation-based feature selection for text categorization. In Proceedings of the IEEE 2nd International Conference on Intelligent Computer Communication and Processing (ICCP), Cluj-Napoca, Romania, 2006, pp. 53–59

2004

Zalán Bodó, Anna Soós. A New Approach to IFS Bounding, In *Seminar on Numerical and Statistical Calculus*, Babeş–Bolyai University, Faculty of Mathematics and Computer Science, Department of Applied Mathematics, Cluj-Napoca, 2004, pp. 43–55.

Zalán-Péter Bodó. Maximal Processor Utilization in Parallel Quadtree-Based Fractal Image Compression on MIMD Architectures, STUDIA UNIV. BABEŞ–BOLYAI, INFORMATICA, Volume XLIX, Number 2, Cluj-Napoca, 2004, pp. 3–16.

Books/ book chapters:

Bodó Zalán. Fordítóprogramok szerkesztése Flex és Bison segítségével. Erdélyi Múzeum-Egyesület, Kolozsvár, 2014 (ISBN 978-606-8178-98-1/978-606-8178-99-8).

Csató Lehel, Bodó Zalán. Neurális hálók és a gépi tanulás módszerei. Kolozsvári Egyetemi Kiadó, 2008.

Translations:

Translation from English to Hungarian of the book "Applied Dimensional Analysis and Modeling" (*Dimenzióanalízis és alkalmazott modellelmélet*) by Thomas Szirtes. Appeared at Typotex (`www.typotex.hu`) in 2006; joint work with Anna Soós

Invited talks:

9th International Conference on Mathematics and Informatics, September 7–8, 2023, Târgu Mureş, Romania: "Automatic fake news detection"

2. Ifjú Székely Informatikusok Kollokviuma (ISZIK 2021), March 6, 2021, Budapest, Hungary (online): "Álhírek automatikus detektálása"

Pannonian Conference on Advances in Information Technology (PCIT 2019), 31 May–1 June 2019, Veszprém, Hungary: "Fake news detection using no external knowledge"

15. A Magyar Tudomány Napja Erdélyben, *Oknyomozó tudomány*, 25th of November, 2016, Cluj-Napoca, Romania: "Költséghatékony osztályozás: a félig felügyelt gépi tanuló algoritmusok"

11th Joint Conference on Mathematics and Computer Science, 20–22nd of May, 2016, Eger, Hungary: "Similarity and Kernels in Machine Learning".

Conferences attended:

SusTrainable Summer School 2023
MACS 2022
ICCP 2021
SISY 2021
Ifjú Székely Informatikusok Kollokviuma (ISZIK), 2021
A Magyar Tudomány Napja Erdélyben, 11. Matematika és Informatika Alkalmazásokkal Konferencia Online Konferencia, 2020
MDIS 2020
7. Digitális Székelyföld Konferencia 2019
PCIT 2019
MACS 2018
SOMET 2017
A Magyar Tudomány Napja Erdélyben 2016
MACS 2016
A Magyar Tudomány Napja Erdélyben 2015
A Magyar Tudomány Napja Erdélyben 2014
ESANN 2014
ESANN 2013
A Magyar Tudomány Napja Erdélyben 2012
WCCI/IJCNN 2012
A Magyar Tudomány Napja Erdélyben 2010
AISTATS 2010 (Active Learning Workshop)
KEPT 2009
MACS 2008
ICCP 2008
KEPT 2007
ICCP 2006
Zilele Academice Clujene 2006

Didactical activities:

2022–2023, II. semester: Information Theory, Methods of natural language processing

2022–2023, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance
2021–2022, II. semester: Information Theory, Methods of natural language processing
2021–2022, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance
2020–2021, II. semester: Information Theory, Methods of natural language processing
2020–2021, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance, Collective Projects
2019–2020, II. semester: Information Theory, Methods of natural language processing
2019–2020, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance, Information Retrieval
2018–2019, II. semester: Artificial Intelligence labs, Information Theory, Methods of natural language processing
2018–2019, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance
2017–2018, II. semester: Artificial Intelligence labs, Information Theory, Methods of natural language processing
2017–2018, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance, Collective Projects
2016–2017, II. semester: Artificial Intelligence labs & seminars, Information Theory
2016–2017, I. semester: Formal Languages and Compiler Techniques, Software Metrics and Quality Assurance, Collective Projects
2015–2016, II. semester: Artificial Intelligence labs, Object-Oriented Programming labs, Methods of natural language processing
2015–2016, I. semester: Formal Languages and Compiler Techniques, Information Retrieval, Software Metrics and Quality Assurance, Collective Projects
2014–2015, II. semester: Object-Oriented Programming labs, Artificial Intelligence labs
2014–2015, I. semester: Formal Languages and Compiler Techniques, Collective Projects, Software Metrics and Quality Assurance
2013–2014, II. semester: Object-Oriented Programming labs, Artificial Intelligence labs, Individual Projects
2013–2014, I. semester: Formal Languages and Compiler Techniques (courses + seminars + labs)
2012–2013, II. semester: Collective Projects, Object-Oriented Programming labs, Artificial Intelligence labs
2012–2013, I. semester: Formal Languages and Compiler Techniques (courses + seminars + labs); Information Theory (courses + seminars)
2011–2012, II. semester: Collective Projects, Object-Oriented Programming labs, Artificial Intelligence labs
2011–2012, I. semester: Formal Languages and Compiler Techniques (courses + seminars + labs); Information Theory (courses + seminars)
2010–2011, II. semester: Artificial Intelligence seminars & labs; Object-Oriented Programming labs; Collective Projects
2010–2011, I. semester: Formal Languages and Compiler Techniques (courses + seminars + labs); Information Theory (courses + seminars); Individual Projects
2009–2010, II. semester: Artificial Intelligence seminars & labs; Object-Oriented Programming labs; Collective Projects

2009–2010, I. semester: Formal Languages and Compiler Techniques seminars & labs; Individual Projects; Graph Theory labs
2008–2009, II. semester: Object-Oriented Programming labs; Artificial Intelligence seminars & labs; Evolutionary Programming; Collective Projects
2008–2009, I. semester: Formal Languages and Compiler Techniques seminars & labs; LaTeX; Distributed Operating Systems labs; Individual Projects
2007–2008, I. semester: Formal Languages and Compiler Techniques seminars & labs; Evolutionary Algorithms labs
2006–2007, II. semester: Compilers laboratories; Evolutionary Algorithms laboratories
2006–2007, I. semester: Formal Languages laboratories; Individual Project
2006–2007, I. semester: Formal Languages laboratories; Individual Project
2005–2006, II. semester: Compiler Construction Using Flex and Bison (laboratories)
2005–2006, I. semester: Graph Theory laboratories
2004–2005, I. semester: Graph Theory seminars

Programming skills:

Python
Matlab
C, C++
Java
Perl
Flex + Bison