BENEDEK NAGY   C. V.

Position

Professor (in Discrete **Mathematics** and Theoretical **Computer Science**)

Department of Mathematics (Applied Mathematics and Computer Science),
Faculty of Arts and Sciences,
Eastern Mediterranean University,
Famagusta, North Cyprus (via Mersin-10, Turkey)

Fields of interest

Digital Geometry, Formal Languages, Automata, Puzzles, Artificial Intelligence, Logical Systems, Bio-inspired Computing, DNA Computing, Algorithms, Graphs, Parallelism, New Computing Paradigms, Digital Image Processing, Soft Computing, Theoretical Computer Science, Discrete Mathematics, Cognitive Sciences

Education - Degrees

Habilitation (dr. habil.) in Mathematics and Computer Science, 2007
University of Debrecen, Debrecen, Hungary
thesis: *Formal languages, graphs and logical puzzles*

DEA Exam in Languages and Information Systems, 2006, with grade "excellent"
Rovira i Virgili University, Tarragona, Spain
(that is a kind of degree between Master and PhD)

Ph.D. in Mathematics and Computer Science, 2004, with grade "summa cum laude"
University of Debrecen, Debrecen
thesis: *Neighbourhood sequences on different grids*

M. A. in General and Applied Linguistics, 2000
University of Debrecen, Debrecen

M. Sc. in Teacher of Physics, 2000
University of Debrecen, Debrecen
(former Kossuth Lajos University)

M. Sc. in Computer Science, 1999
Kossuth Lajos University, Debrecen
thesis: *Word processing exercises for advanced users* (in Hungarian)
(5-year University degree, it is the continuation of the B.Sc. degree below)

M. A. in Philosophy with Logic Specialization, 1998
Kossuth Lajos University, Debrecen
thesis: *Interval-valued logic* (in Hungarian)
(5-year University degree, it is equivalent to B.A.+M.A. in the new, Bologna-system)

B. Sc. in Programming Mathematics, 1997
Kossuth Lajos University, Debrecen
thesis: *Timegames* (in Hungarian)
(3-year College degree, it is equivalent to B.Sc. in the new, Bologna-system)

M. Sc. in Physics, 1996
Kossuth Lajos University, Debrecen
thesis: *Rényi entropy of the randomwalk on the squaregrid* (in Hungarian)
(5-year University degree, it is equivalent to B.Sc.+M.Sc. in the new, Bologna-system)

Appointments - Experience

2013-   **Eastern Mediterranean University, Faculty of Arts and Sciences, Dept. of Mathematics**
Faculty member

2010-2012   **University of Debrecen, Faculty of Informatics**
Vice-dean of the Faculty of Informatics

2009-2016   **University of Debrecen, Faculty of Informatics, Dept. of Computer Science**
Associate Professor

2007-2009   **University of Debrecen, Faculty of Informatics, Dept. of Comp. Sci.**
Assistant Professor

2003-2008   **University of Rovira i Virgili, Tarragona, Spain, Research Group on Mathematical Linguistics**
Researcher and Postdoctoral Researcher

Scientific Service

Conference organization

Organizing committee

- **CIAA 2023**, 27th International Conference on Implementation and Application of Automata, September 19-23, 2023, Famagusta, North Cyprus, co-chair (https://ciaa.emu.edu.tr/en)
- **NCMA 2023**, 13th International Workshop on Non-Classical Models of Automata and Applications, September 18-19, 2023, Famagusta, North Cyprus, co-chair (https://ncma.emu.edu.tr/en)
- **ISPA 2021**, 12th International Symposium on Image and Signal Processing and Analysis, special session co-oranizer
- **NCMA 2016**, 8th International Workshop on Non-Classical Models of Automata and Applications, August 29-30, 2016, Debrecen, Hungary, co-chair
- **MCU'15**, 7th Conference on Machines, Computations and Universality, Famagusta, North Cyprus, organising commitee co-chair (http://mcu2015.emu.edu.tr/mcu2015/)
- **CiE 2014**, 10th Computability in Europe - Language, Life, Limits, Budapest, Hungary, organiser, committee member (http://www.illc.uva.nl/CiE/index.php?page=22_8),
CiE 2014 co-located workshop "New Computing Paradigms", organiser
- **AFL'11**, 13th International Conference on Automata and Formal Languages, 2011 Debrecen, Hungary, member of organising committee

Session chair in various conferences

Steering committee

- **MCU:** Conference on Machines, Computations and Universality

Program committee *(selected items)*

- **NCMA 2022**, 12th International Workshop on Non-Classical Models of Automata and Applications, August, 2022, Debrecen, Hungary
- **MCU 2022**, 9th Conference on Machines, Computations and Universality, Debrecen, Hungary
- **IWCIA 2022**, International Workshop on Combinatorial Image Analysis, July, 2022, Messina, Italy
- **Matcos 2022**, Middle-European Conference on Applied Theoretical Computer Science, October 2022, Slovenia
- **IWCIA 2020**, 20st International Workshop on Combinatorial Image Analysis, Novi Sad, Serbia
- **Matcos 2019**, Middle-European Conference on Applied Theoretical Computer Science, October 2019, Slovenia

- **ISPA 2019**, 11th International Symposium on Image and Signal Processing and Analysis, Dubrovnik, Croatia, September 2019
- **ICPR 2018**, 24th International Conference on Pattern Recognition, 20-24 August 2018, Beijing, China
- **IWCIA 2018**, International Workshop on Combinatorial Image Analysis, Nov 22-24, 2018, Porto, Portugal
- **MCU 2018,** 8th Conference on Machines, Computations and Universality, June 28-30, 2018, Fontainebleau, Paris region, France, PC member
- **ISPA 2017,** 10th International Symposium on Image and Signal Processing and Analysis, September 2017, Ljubljana, Slovenia, PC member
- **AFL 2017**, 15th International Conference on Automata and Formal Languages, September, 2017, Debrecen, Hungary, PC member
- **NCMA 2017**, 9th International Workshop on Non-Classical Models of Automata and Applications, Prague, Czech Republic, PC member
- **IWCIA 2017**, 18th International Workshop on Combinatorial Image Analysis, Plovdiv, Bulgaria, PC member
- Workshop on Discrete Geometry and Mathematical Morphology for Computer Vision In conjunction with ACCV 2016, Taipei, Taiwan, November 24, 2016, PC member
- **NCMA 2016**, 8th International Workshop on Non-Classical Models of Automata and Applications, August 29-30, 2016, Debrecen, Hungary, co-chair
- **MATCOS-2016**, Middle-European Conference on Applied Theoretical Computer Science (held in conjunction with the 19th Multi-Conference on Information Society, Ljubljana), Koper, Slovenia, October 2016, PC member
- **MCU'15**, 7th Conference on Machines, Computations and Universality, Famagusta, North Cyprus, conference **co-chair**
- **IWCIA 2015,** 17th International Workshop on Combinatorial Image Analysis, Indian Statistical Institute, Kolkata, India, program committee member
- **ISPA 2015**, 9th International Symposium on Image and Signal Processing and Analysis, Edinburgh, Scotland, UK, PC member
- **ICPR 2014**, International Conference on Pattern Recognition, Stockholm, Sweden, committee member
- **CiE 2014**, Computability in Europe 2014, program committee member
- **IWCIA 2014**, 16th International Workshop on Combinatorial Image Analysis, Brno, Czech Republic, PC member

Reviewer for various International journals and International Scientific Conferences

Invited/Plenary/Keynote speaker

- **IWCIA 2022**, International Workshop on Combinatorial Image Analysis, July 13-15, 2022, Messina, Italy, talk on " **Non-traditional 2D Grids in Combinatorial Imaging – Advances and Challenges**"
- **DCFS 2019**, 21st International Conference on Descriptional Complexity of Formal Systems, 17-19 July 2019, Kosice, Slovakia, talk on "**Union-Freeness, Deterministic Union-Freeness and Union Complexity**"

Editorial activity

- **Mathematical Problems in Engineering,** editor (2020-)
- Henning Bordihn, Benedek Nagy, György Vaszil: **RAIRO - Theoretical Informatics and Applications** (RAIRO: ITA), Special Issue: NON-CLASSICAL MODELS OF AUTOMATA AND APPLICATIONS VIII, 2018.
- Jérôme Durand-Lose, Jarkko Kari, Benedek Nagy: **Fundamenta Informaticae** - Volume 155, issue 1-2 Special Issue on Machines, Computations and Universality (MCU 2015)
- Henning Bordihn, Rudolf Freund, Benedek Nagy, György Vaszil: Eighth Workshop on Non-Classical Model of Automata and Applications, NCMA 2016, August 29th-30th, Debrecen, Hungary, books@ocg.at, Austrian Computer Society, BAND 321 (2016).
- Henning Bordihn, Rudolf Freund, Benedek Nagy, György Vaszil: Eighth Workshop on Non-Classical Model of Automata and Applications, NCMA 2016, Short Papers, ISBN 978-3-200-04725-9.
- Jérôme Durand-Lose, Benedek Nagy: Machines, Computations, and Universality - 7th International Conference, MCU 2015, Famagusta, North Cyprus, September 9-11, 2015, Proceedings. Lecture Notes in Computer Science 9288, Springer 2015, ISBN 978-3-319-23110-5

Teaching

September 2013-present: Eastern Mediterranean University, Famagusta, North Cyprus (via Mersin-10, Turkey)
Associate Professor
teaching in undergraduate (all courses are in English)

- Discrete Mathematics
- Discrete Mathematics for Information Technology
- Mathematical Logic of Computers
- Fundamentals of Computer Science I-II
- Operating Systems
- Operating Systems and Their Applications
- Database Management Systems
- Algorithm Design and Analysis
- Data Structures
- Data Structures and Algorithms
- Logic

teaching in graduate and PhD level (all courses are in English)

- Digital Geometry
- Theory of Algorithms
- Theory of Computing
- Combinatorics
- Graph Theory
- Finite Automata

Publications

Author/co-author of approx. 250 international journal and international conference papers.

Journal Papers (selected items from the last years, SCI and SCI-expanded papers)

Radim Kocman, Zbynek Krivka, Alexander Meduna, Benedek Nagy: A jumping $5'\rightarrow 3'$ Watson-Crick finite automata model. *Acta Informatica* **59**(5): 557-584 (2022)

Laith Alzboon, Benedek Nagy: A Comparison of Various Extensions of Strong Truthteller and Strong Liar Puzzles (Mutes and Crazies). *Axioms* **11**(7): 322 (2022)

Benedek Nagy: Operational union-complexity. *Inf. Comput.* **284**: 104692 (2022)

Benedek Nagy, Shaghayegh Parchami: $5' \rightarrow 3'$ Watson-Crick automata languages-without sensing parameter. *Nat. Comput.* **21**(4): 679-691 (2022)

Aydin Avkan, Benedek Nagy, Müge Saadetoglu: A comparison of digitized rotations of neighborhood motion maps of closest neighbors on 2D regular grids. *Signal Image Video Process.* **16**(2): 505-513 (2022)

Benedek Nagy, Shaghayegh Parchami: On deterministic sensing $5'\rightarrow 3'$ Watson-Crick finite automata: a full hierarchy in 2detLIN. *Acta Informatica* **58**(3): 153-175 (2021)

Khaled Abuhmaidan, Monther Aldwairi, Benedek Nagy: Vector Arithmetic in the Triangular Grid. *Entropy* **23**(3): 373 (2021)

Benedek Nagy, Sándor Vályi: Circular Interval-valued Computers and Simulation of (Red-green) Turing Machines. *Fundam. Informaticae* **181**(2-3): 213-238 (2021)

Benedek Nagy: Union-Freeness Revisited - Between Deterministic and Nondeterministic Union-Free Languages. *Int. J. Found. Comput. Sci.* **32**(5): 551-573 (2021)

Benedek Nagy, Zita Kovács: On deterministic 1-limited $5' \rightarrow 3'$ sensing Watson-Crick finite-state transducers. *RAIRO Theor. Informatics Appl.* **55**: 5 (2021)

Benedek Nagy: State-deterministic $5' \rightarrow 3'$ Watson-Crick automata. *Nat. Comput.* **20**(4): 725-737 (2021)

Gergely Kovács, Benedek Nagy, Neset Deniz Turgay: Distance on the Cairo pattern. *Pattern Recognit. Lett.* **145**: 141-146 (2021)

Gergely Kovács, Benedek Nagy, Béla Vizvári: Weighted distances on the truncated hexagonal grid. *Pattern Recognit. Lett.* **152**: 26-33 (2021)

Aydin Avkan, Benedek Nagy, Müge Saadetoglu: Digitized rotations of 12 neighbors on the triangular grid. *Ann. Math. Artif. Intell.* **88**(8): 833-857 (2020)

Gergely Kovács, Benedek Nagy, Béla Vizvári: On disks of the triangular grid: An application of optimization theory in discrete geometry. *Discret. Appl. Math.* **282**: 136-151 (2020)

Benedek Nagy, Tibor Lukic: Binary tomography on the isometric tessellation involving pixel shape orientation. *IET Image Process*. **14**(1): 25-30 (2020)

Benedek Nagy: On the Membership Problem of Permutation Grammars - A Direct Proof of NP-Completeness. *Int. J. Found. Comput. Sci.* **31**(4): 515-525 (2020)

Benedek Nagy: 5′→3′ Watson-Crick pushdown automata. *Inf. Sci.* **537**: 452-466 (2020)

Benedek Nagy, Friedrich Otto: Linear automata with translucent letters and linear context-free trace languages. *RAIRO Theor. Informatics Appl.* **54**: 3 (2020)

Mohsen Abdalla, Benedek Nagy: Mathematical Morphology on the Triangular Grid: The Strict Approach. *SIAM J. Imaging Sci.* **13**(3): 1367-1385 (2020)

Benedek Nagy, Raed Basbous, Tibor Tajti: Lazy evaluations in Łukasiewicz type fuzzy logic. *Fuzzy Sets Syst.* **376**: 127-151 (2019)

Gergely Kovács, Benedek Nagy, Béla Vizvári: Chamfer distances on the isometric grid: a structural description of minimal distances based on linear programming approach. *J. Comb. Optim.* **38**(3): 867-886 (2019)

Benedek Nagy, Khaled Abuhmaidan: A Continuous Coordinate System for the Plane by Triangular Symmetry. *Symmetry* **11**(2): 191 (2019)

Tibor Lukić, Benedek Nagy: Regularized binary tomography on the hexagonal grid, *Physica Scripta* **94** (2019) 025201

MohammadReza Saadat, Benedek Nagy: Cellular Automata Approach to Mathematical Morphology in the Triangular Grid, *Acta Polytechnica Hungarica (Journal of Applied Sciences)* **15**/6 (2018), 45-62.

Lidija Comic, Benedek Nagy: A Description of the Diamond Grid for Topological and Combinatorial Analysis, *Graphical Models* **100** (2018), 33-50.

Mohsen Abdalla, Benedek Nagy: Dilation and Erosion on the Triangular Tessellation: An Independent Approach, *IEEE Access* **6** (2018), 23108-23119.

Benedek Nagy: Generalised distances of sequences I: B-distances, *Miskolc Mathematical Notes* **19**/1 (2018), 397-411.

Benedek Nagy, Robin Strand, Nicolas Normand: Distance Functions Based on Multiple Types of Weighted Steps Combined with Neighborhood Sequences, *Journal of Mathematical Imaging and Vision* (Springer) **60** (2018), 1209-1219.

Hamzeh Mujahed, Benedek Nagy: Hyper-Wiener index on rows of unit cells of the BCC grid, *Comptes rendus de l'Académie bulgare des Sciences* **71**/5 (2018), 675-684.

Hamzeh Mujahed, Benedek Nagy: Exact Formula for Computing the Hyper-Wiener Index on Rows of Unit Cells of the Face-Centred Cubic Lattice, *Analele Universitatii "Ovidius" Constanta - Seria Matematica* (DE GRUYTER), **26**/1 (2018), 169–187.

Benedek Nagy: The Cheapest Way to Obtain Solution by Graph-Search Algorithms, *Acta Polytechnica Hungarica* **14**/6 (2017), 29-40.

Benedek Nagy, Sándor Vályi: A Shift-free Characterization of NP within Interval-valued Computing. *Fundam. Inform.* **155** (2017), 187-207.

Gergely Kovács, Benedek Nagy, Béla Vizvári: Weighted Distances and Digital Disks on the Khalimsky Grid - Disks with Holes and Islands, *Journal of Mathematical Imaging and Vision* **59**(1): 2-22 (2017)

Benedek Nagy, Elisa Valentina Moisi: Memetic algorithms for reconstruction of binary images on triangular grids with 3 and 6 projections, *Applied Soft Computing* **52**, (2017), 549-565.

Benedek Nagy: Application of neighborhood sequences in communication of hexagonal networks, *Discrete Applied Mathematics – DAM* **216** (2017), 424-440.

L. Comic, B. Nagy: A combinatorial coordinate system for the body-centered cubic grid, *Graphical Models* **87** (2016), 11-22.

L. Comic, B. Nagy: A topological coordinate system for the diamond cubic grid, *Acta Crystallographica, Section A: Foundations and Advances*, **A72**/5 (2016), 570-581.

B. Nagy, T. Lukic: Dense projection tomography on the triangular tiling, *Fundamenta Informaticae* **145** (2016), 125–141.

L. Comic, B. Nagy: A topological 4-coordinate system for the face centered cubic grid, *Pattern Recognition Letters - PRL* **83** (2016), 67–74.

László Hegedüs, Benedek Nagy: On periodic properties of circular words, *Discrete Mathematics* **339**/3 (2016), 1189-1197.

Hamzeh Mujahed, Benedek Nagy: Wiener index on rows of unit cells of the face-centred cubic lattice, *Acta Crystallographica, Section A: Foundations and Advances*, Volume **A72**, Part 2 (2016), 243-249.

Raed Basbous, Benedek Nagy: Strategies to Fast Evaluation of Tree Networks, *Acta Polytechnica Hungarica* **12**/6 (2015), 127-148.

Benedek Nagy: Cellular topology and topological coordinate systems on the hexagonal and on the triangular grids, *Annals of Mathematics and Artificial Intelligence* (Springer) **75** (2015), 117-134.

Tibor Lukic, Benedek Nagy: Deterministic discrete tomography reconstruction by energy minimization method on the triangular grid, *Pattern Recognition Letters* **49** (2014), 11-16.

B. Nagy, F. Otto: Deterministic Pushdown-CD-Systems of Stateless Deterministic R(1)-Automata, *Acta Informatica* **50** (2013), 229-255.

B. Nagy, K. Barczi: Isoperimetrically Optimal Polygons in the Triangular Grid with Jordan-type Neighbourhood on the Boundary, *International Journal of Computer Mathematics* **90** (2013), 1629-1652.

B. Nagy: On a hierarchy of 5' → 3' sensing Watson-Crick finite automata languages, *Journal of Logic and Computation* (Oxford University Press) **23** (2013), 855-872.

B. Nagy, F. Otto: On Globally Deterministic CD-Systems of Stateless R-Automata with Window Size One, *International Journal of Computer Mathematics* **90** (2013), 1254-1277.

L. Hegedüs, B. Nagy, Ö. Egocioglu: Stateless Multicounter 5' → 3' Watson-Crick Automata: The Deterministic Case, *Natural Computing* **11** (2012), 361-368.

B. Nagy, F. Otto: On CD-systems of stateless deterministic R-automata with window size one, *Journal of Computer and System Sciences* - JCSS **78** (2012), 780-806.

B. Nagy, S. Vályi: Prime factorization by interval-valued computing, *Publicationes Mathematicae Debrecen* **79**/3-4 (2011), 539-551.

B. Nagy, F. Otto: CD-Systems of Stateless Deterministic R(1)-Automata Governed by an External Pushdown Store, *RAIRO - Theoretical Informatics and Applications, RAIRO-ITA* **45** (2011), 413–448.

Ö. Egeciouglu, L. Hegedüs, B. Nagy: Hierarchies of Stateless Multicounter 5' → 3' Watson-Crick Automata Languages, *Fundamenta Informaticae - FI* **110** (2011), 111-123.

R. Strand, B. Nagy, G. Borgefors, Digital Distance Functions on Three-Dimensional Grids, *Theoretical Computer Science - TCS* **412** (2011), 1350-1363.

B. Nagy, R. Strand: Approximating Euclidean circles by neighbourhood sequences in a hexagonal grid, *Theoretical Computer Science - TCS* **412** (2011), 1364-1377.

P. Leupold, B. Nagy: 5'→3' Watson-Crick automata with several runs, *Fundamenta Informaticae* **104** (2010) 71-91.

Referred Conference Articles (Selected items from the last years)

Benedek Nagy: Union-Complexities of Kleene Plus Operation. **DCFS 2022, LNCS 13439** (2022), 197-211.

Benedek Nagy: From Finite Automata to Fractal Automata - The Power of Recursion. **MCU 2022, LNCS 13419** (2022) 109-125.

Benedek Nagy: Quasi-deterministic 5' → 3' Watson-Crick Automata. **NCMA 2022, EPTCS 367** (2022), 160-176.

Mohammadreza Saadat, Benedek Nagy: Digital Geometry on the Dual of Some Semi-regular Tessellations. **DGMM 2021, LNCS 12708** (2021), 283-295.

Mohammadreza Saadat, Benedek Nagy: Generating Patterns on the Triangular Grid by Cellular Automata including Alternating Use of Two Rules. **ISPA 2021** (IEEE) 253-258.

Benedek Nagy, Robin Strand, Nicolas Normand: Distance Transform Based on Weight Sequences. **DGCI 2019, LNCS 11414** (2019), 62-74.

Aydin Avkan, Benedek Nagy, Müge Saadetoglu: On the Angles of Change of the Neighborhood Motion Maps on the Triangular Grid. **ISPA 2019** (IEEE) 76-81.

Benedek Nagy, Zita Kovács: On simple 5' → 3' sensing Watson-Crick finite-state transducers. **NCMA 2019**: 155-170.

Benedek Nagy, Friedrich Otto: Two-Head Finite-State Acceptors with Translucent Letters**. SOFSEM 2019, LNCS 11376** (2019), 406-418.

Benedek Nagy, Tibor Lukic: Binary Tomography on Triangular Grid Involving Hexagonal Grid Approach, **IWCIA 2018, LNCS 11255** (2018), 68-81.

Aydin Avkan, Benedek Nagy, Müge Saadetoglu: Digitized Rotations of Closest Neighborhood on the Triangular Grid, **IWCIA 2018, LNCS 11255** (2018), 53-67.

Benedek Nagy, Sándor Vályi: An Extension of Interval-Valued Computing Equivalent to Red-Green Turing Machines, **MCU 2018**: 8th International Conference on Machines, Computations, and Universality, **LNCS 10881** (2018), 137-152.

Shaghayegh Parchami, Benedek Nagy: Deterministic Sensing 5' → 3' Watson-Crick Automata Without Sensing Parameter, **UCNC 2018**: 17th International Conference on Unconventional Computation and Natural Computation, **LNCS 10867** (2018), 173-187.

Gergely Kovács, Benedek Nagy, Béla Vizvári: Weighted Distances on the Trihexagonal Grid, **DGCI 2017**, Discrete Geometry for Computer Imagery - 20th IAPR International Conference, **LNCS** 10502 (2017), 82-93.

Gergely Kovács, Benedek Nagy, Béla Vizvári: An Integer Programming Approach to Characterize Digital Disks on the Triangular Grid, **DGCI 2017**, Discrete Geometry for Computer Imagery - 20th IAPR International Conference, **LNCS** 10502 (2017), 94-106.

Benedek Nagy, Shaghayegh Parchami, Hamid Mir-Mohammad-Sadeghi: A New Sensing 5'->3' Watson-Crick Automata Concept, **AFL 2017**, Proceedings 15th International Conference on Automata and Formal Languages, **EPTCS** 252 (2017), 195-204.

Mohsen Abdalla, Benedek Nagy: Concepts of Binary Morphological Operations Dilation and Erosion on the Triangular Grid, Computational Modeling of Objects Presented in Images. Fundamentals, Methods, and Applications (**CompIMAGE 2016**, International Symposium Computational Modeling of Objects Represented in Images), **LNCS** 10149 (2017), 89-104.

Raed Basbous, Tibor Tajti, Benedek Nagy: Fast Evaluations in Product Logic: Various Pruning Techniques, IEEE WCCI 2016 - IEEE World Congress on Computational Intelligence, **FUZZ-IEEE 2016** - the 2016 IEEE International Conference on Fuzzy Systems, Vancouver, Canada, 140-147.

Benedek Nagy: Number of Words Characterizing Digital Balls on the Triangular Tiling, **DGCI 2016**, **LNCS** 9647 (2016), 31-44.

Raed Basbous, Benedek Nagy, Tibor Tajti: Short Circuit Evaluations in Gödel Type Logic, V. Ravi et al. (eds.), Proceedings of the Fifth International Conference on Fuzzy and Neuro Computing (**FANCCO - 2015**, India), Advances in Intelligent Systems and Computing - **AISC** 415 (2015), 119-138. (Springer)

Mousumi Dutt, Arindam Biswas, Benedek Nagy: Number of Shortest Paths in Triangular Grid for 1- and 2-Neighborhoods, **IWCIA'15**, Seventeenth International Workshop on Combinatorial Image Analysis, **LNCS** 9448 (2015), 115-124.

Lidija Comic and Benedek Nagy: A Combinatorial 4-Coordinate System for the Diamond Grid, 12th International Symposium on Mathematical Morphology, **ISMM 2015,** Reykjavik, Iceland, **LNCS** 9082, (2015) 585–596.

Hamzeh Mujahed and Benedek Nagy: Wiener Index on Lines of Unit Cells of the Body-Centered Cubic Grid,12th International Symposium on Mathematical Morphology, **ISMM 2015,** Reykjavik, Iceland, **LNCS** 9082, (2015) 597–606.

Benedek Nagy, Elisa Valentina Moisi: Binary tomography on the triangular grid with 3 alternative directions - a genetic approach, **ICPR 2014**: 22nd International Conference on Pattern Recognition, Stockholm, Sweden, 1079-1084 (IEEE Computer Society).

Gemma Bel Enguix, Benedek Nagy: Modeling Syntactic Complexity with P Systems: A Preview, **UCNC 2014**: Unconventional Computation and Natural Computation, Lecture Notes in Computer Science - **LNCS 8553** (2014), 54-66.

Benedek Nagy: Graphical Representations of Context-Free Languages, **Diagrams 2014**: Diagrammatic Representation and Inference, Lecture Notes in Computer Science - **LNCS 8578** (2014), 48-50.

Beáta Bojda, Katalin Bubnó, Benedek Nagy, Viktor Takács: A Graphical Representation of Boolean Logic, **Diagrams 2014, LNCS 8578** (2014), 228-230.

Benedek Nagy: Weighted Distances on a Triangular Grid, **IWCIA 2014**: Combinatorial Image Analysis, Lecture Notes in Computer Science - **LNCS 8466** (2014), 37-50.

László Hegedüs, Benedek Nagy: Representations of Circular Words. **AFL 2014**: Automata and Formal Languages, Szeged, Hungary, **EPTCS 151** (2014), 261-270.

Benedek Nagy, Robin Strand, Nicolas Normand: A Weight Sequence Distance Function, **ISSM** - 11th International Symposium on Mathematical Morphology, **LNCS 7883** (2013), 292-301.

B. Nagy, S. Vályi: Computing discrete logarithm by interval-valued paradigm, (Benedikt Loewe, Glynn Winskel, eds.), Proceedings 8th Workshop on Developments in Computational Models - **DCM 2012**, Cambridge, England, Electronic Proceedings in Theoretical Computer Science - **EPTCS 143** (2014), 76-86.

B. Nagy, On Efficient Algorithms for SAT, **CMC 2012**, **LNCS 7762** (2013), 295-310.

V. Halász, L. Hegedüs, I. Hornyák, B. Nagy: Solving application oriented graph theoretical problems with DNA computing, (J. C. Bansal et al., eds.), Proceedings of Seventh International Conference on Bio-Inspired Computing: Theories and Applications (**BIC-TA 2012**), Advances in Intelligent Systems and Computing (**AISC**, Springer) **201**, 75-85.

B. Nagy, Cellular Topology on the Triangular Grid, **IWCIA 2012**, Lecture Notes in Computer Science - **LNCS 7655,** (2012), 143–153.

G. Jiraskova, B. Nagy: On Union-Free and Deterministic Union-Free Languages, International Federation for Information Processing - Theoretical Computer Science 2012, **IFIP-TCS 2012**, **LNCS 7604** (2012), 179–192, 2012.

B. Nagy, F. Otto: Globally deterministic CD-systems of stateless R(1)-automata, **LATA 2011, LNCS 6638** (2011), 390-401

B. Nagy, K. Barczi: Isoperimetrically optimal Polygons in the Triangular Grid, **IWCIA 2011, LNCS 6636** (2011), 194-207.

B. Nagy, F. Otto: An automata-theoretical characterization of context-free trace languages, **SOFSEM 2011**, Lecture Notes In Computer Science - **LNCS 6543** (2011), 406–417.

B. Nagy, An automata-theoretic characterization of the Chomsky-hierarchy, **TAMC 2010**, Lecture Notes in Computer Science - **LNCS 6108** (2010), 361-372.

B. Nagy, F. Otto: CD-Systems of Stateless Deterministic R(1)-Automata Accept all Rational Trace Languages, **LATA 2010**, Lecture Notes in Computer Science - **LNCS 6031** (2010), 463-474. Springer, Heidelberg

Over 150 conference/workshop presentations and research seminars/invited talks in various universities around the world.