

LISTA DE LUCRĂRI

Conf. dr. ing. **Marius Gavrilesu**

1. Teza de doctorat (T1):

T1. Vizualizarea și prelucrarea grafică a datelor volumetrice (*Visualization and Graphical Processing of Volume Data*), teză de doctorat, Universitatea Tehnică "Gheorghe Asachi" din Iași, în cotutelă cu Vienna University of Technology, Austria, 2008-2011.

2. Cărți/ capitole cărți de specialitate publicate în edituri recunoscute din țară sau din străinătate (Ca1, Ca2 etc.), articole/ studii publicate în reviste din țară/ străinătate, cu factor de impact/ indexate în BDI/ neindexate în BDI (R1, R2 etc.), brevete de invenție (B1, B2 etc.), creații artistice prezentate la manifestări recunoscute din țară/ străinătate (A1, A2 etc.), articole/ studii publicate în volumele manifestărilor științifice naționale/ internaționale indexate BDI/ neindexate BDI (V1, V2 etc.), după caz, precum și alte lucrări (N1, N2 etc.) prin care se aduc contribuții științifice la dezvoltarea domeniului.

| Cărți/ capitole cărți de specialitate publicate în edituri recunoscute din țară sau din străinătate | |
|---|---|
| Ca1 | M. Gavrilesu , Metode de învățare automată – Noțiuni elementare și implementări în limbajul Python, Ecozone, 2024, ISBN 978-606-8625-42-3. |
| Ca2 | M. O. Pogăcean , M. Gavrilesu , P. Cozma , I. M. Simion , M. Roșca , Raluca-Maria Hlihor , Maria Gavrilesu , Modelarea dinamicii pesticidelor în produse vegetale și estimarea riscurilor asupra sănătății, Politehniun, 2018, ISBN 978-973-621-477-6. |
| Ca3 | M. Gavrilesu , Volume Rendering, Classification and Analysis Techniques on Modern GPUs, Ecozone, 2012, ISBN 978-973-7645-97-5. |

| Articole publicate în reviste cotate ISI cu factor de impact (în JCRs - Clarivate) | |
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| R | R1 M. Gavrilesu , F. Leon, and A.-A. Minea, "Techniques for Transversal Skill Classification and Relevant Keyword Extraction from Job Advertisements," Information, vol.16, no. 3, p. 167, http://doi.org/10.3390/info16030167 , 2025. |
| | R2 I. Bîrgăuanu , M. Gavrilesu* , F. Leon, S. Curteanu, and G. Lisa, "Thermodynamic properties of binary, ternary and quaternary mixtures: N-butyl acetate- n-hexanol - n,n-dimethylacetamide-water. Modeling using regression algorithms and optimization using socially-inspired evolutionary algorithms," <i>Journal of the Taiwan Institute of Chemical Engineers</i> , vol. 165, 105796, http://doi.org/10.1016/j.jtice.2024.105796 , 2024. |

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| | <p>R3 F. Leon, M. Gavrilescu, S.A. Floria, and A.A. Minea, "Hierarchical classification of transversal skills in job advertisements based on sentence embeddings," <i>Information</i>, vol. 15 (3), 151, 10.3390/info15030151, 2024.</p> |
| | <p>R4 S.A. Floria, M. Gavrilescu, F. Leon, and S. Curteanu, "Ensembles of biologically inspired optimization algorithms for training multilayer perceptron neural networks," <i>Applied Sciences</i>, vol. 12 (19) 9997, http://doi.org/10.3390/app12199997, 2022.</p> |
| | <p>R5 M. Gavrilescu*, S.A. Floria, F. Leon, and S. Curteanu, "A hybrid competitive evolutionary neural network optimization algorithm for a regression problem in chemical engineering," <i>Mathematics</i>, vol. 10 (19), 3581, http://doi.org/10.3390/math10193581, 2022.</p> |
| | <p>R6 C. Anton, F. Leon, M. Gavrilescu, E.N. Drăgoi, S.A. Floria, S. Curteanu, and C. Lisa, "Obtaining bricks using silicon-based materials: Experiments, modeling and optimization with artificial intelligence tools," <i>Mathematics</i>, vol. 10 (11), 1891, http://doi.org/10.3390/math10111891, 2022.</p> |
| | <p>R7 F. Leon and M. Gavrilescu*, "A review of tracking and trajectory prediction methods for autonomous driving," <i>Mathematics</i>, vol. 9, (6), 660, http://doi.org/10.3390/math9060660, 2021.</p> |
| | <p>R8 P. Cozma, M. Gavrilescu, M. Roșca, L. C. Apostol, R. M. Hlihor, and M. Gavrilescu, "Evaluation of human health risks associated with pesticide dietary intake - An overview on quantitative uncertainty analysis," <i>Environmental Engineering and Management Journal (EEMJ)</i>, vol. 17 (9), http://doi.org/10.30638/eemj.2018.224 2018.</p> |
| | <p>R9 C. Ghinea, E. N. Drăgoi, E. D. Comăniță, M. Gavrilescu, T. Câmpean, S. Curteanu, and M. Gavrilescu, "Forecasting municipal solid waste generation using prognostic tools and regression analysis," <i>Journal of Environmental Management</i>, vol. 182, pp. 80-93, http://doi.org/10.1016/j.jenvman.2016.07.026, 2016.</p> |
| | <p>R10 M. Gavrilescu*, "Representation of 3D atmospheric data using a multi-stage visualization pipeline," <i>Environmental Engineering and Management Journal</i>, vol. 12, (6), http://doi.org/10.30638/eemj.2013.147, pp. 1193-1198, 2013.</p> |
| | <p>R11 M. Gavrilescu*, "Visual analysis of the human body through volume classification," <i>European Journal of Science and Theology</i>, vol. 8, no. 4, pp. 159-170, 2012.</p> |
| | <p>R12 P. Herghelegiu, M. Gavrilescu, and V. Manta, "Visualization of segmented structures in 3D multimodal medical data sets," <i>Advances in Electrical and Computer Engineering</i>, vol. 11 (3), pp. 99-104, http://doi.org/10.4316/AECE.2011.03016, 2011.</p> |
| | <p>R13 M. Gavrilescu* and V. Manta, "Advances in the visualization of three-dimensional seismic volume data," <i>Environmental Engineering and Management Journal</i>, vol. 10, (4), http://doi.org/10.30638/eemj.2011.079, 2011.</p> |
| | <p>*Autor principal</p> |
| R | Articole publicate în reviste indexate BDI |

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| | R14 M. Gavrilesu , M.M. Malik, E. Groller, Enhanced interfaces for parameter adjustment in volume rendering applications, <i>Bulletin of the Polytechnic Institute of Iasi</i> , LVI (LX), 4, 163-174, 2010. |
| | R15 M. Gavrilesu , V. Manta, W. Purgathofer, Post-rendering enhancement of volumes, <i>Bulletin of the Polytechnic Institute of Iasi</i> , LV(LIX), 3, 43-54, 2009. |
| | R16 M. Gavrilesu , V. Manta, Volume visualization applied in medical imaging, <i>Bulletin of the Polytechnic Institute of Iasi</i> , LIV (LVIII), 3-4, 43-52, 2008. |

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| | Brevete de invenție acordate în țară |
| | B1 S. Curteanu, F. Leon, M. Gavrilesu , S.-A. Floria, C. Anton, C. Lisa, Utilizarea unor algoritmi de inspirație biologică la minimizarea noxelor în procesul de obținere a cărămidilor, RGII/INT/4670/15.11.2023. |
| B | B2 S. Curteanu, F. Leon, M. Gavrilesu , S.-A. Floria, C. Anton, C. Lisa, Modelarea procesului de fabricație a cărămidilor folosind ansambluri de metode evolutive de inspirație biologică și socială, RGII/INT/4805/23.11.2023. |
| | B3 M. Gavrilesu , F. Leon, S. Curteanu, Platformă software pentru rezolvarea problemelor de regresie folosind algoritmi individuali și combinați în ansambluri, RGII/INT/4813/24.11.2023. |
| | B4 S. Curteanu, F. Leon, M. Gavrilesu , N. Anton, C. Lisa, F. Tarcoveanu, Rețele neuronale proiectate în Pytorch pentru predicția evoluției glaucomului, RGII/INT/4867/29.11.2023. |
| | Articol/studiu publicat în volumul unei manifestări științifice indexate in Web of Science (ISI Proceedings, Clarivate) |
| | V1 M. Gavrilesu , Evaluation of Vaccination Strategies in an Agent-Based SEIRV Epidemic Model, 13th IEEE International Conference on E-Health and Bioengineering, Iasi, Romania, 2025. |
| | V2 M. Gavrilesu , Improved Exploration of Volume Data Using Transition Transfer Functions, 29th International Conference on System Theory, Control and Computing (ICSTCC), Cluj, Romania, pp. 770-775, 2025. |
| V | V3 M. Gavrilesu , G.-A. Scînteie, D.-E. Bărbuță, F. Leon, Improving Maze Exploration and Evacuation with Reactive Agents through Directional Weighting, 29th International Conference on System Theory, Control and Computing (ICSTCC), Cluj, Romania, pp. 385-390, 2025. |
| | V4 M. Gavrilesu* , F. Leon, L.-E. Ferariu, and C.-N. Buțincu, "A Review of Evolutionary Optimization Methods for Information Visualization and Feature Space Exploration", in <i>18th International Conference On Innovations In Intelligent Systems and Applications (INISTA)</i> , http://doi.org/10.1109/INISTA62901.2024.10683825 , 2024. |
| | V5 M. Gavrilesu and F. Leon, "Using Knowledge Transfer for Neural Network Architecture Optimization with Improved Training Efficiency," in <i>2022 26th International Conference on System Theory, Control and Computing (ICSTCC)</i> , pp. 271-276, http://doi.org/10.1109/ICSTCC55426.2022.9931898 , 2022. |

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| <p>V6 D.D. Vecliuc, F. Leon, E. Achirei, Ș. Muraru, and M. Gavrilesu, "An Experimental Study of Collaborative Behaviors in Emergency Evacuation Scenarios," in 2021 25th International Conference on System Theory, Control and Computing (ICSTCC), pp. 695-700, http://doi.org/10.1109/ICSTCC52150.2021.9607170, 2021.</p> |
| <p>V7 M. Gavrilesu, "Shape Variance-Based Feature Extraction for Biometric Fingerprint Analysis," in 2021 25th International Conference on System Theory, Control and Computing (ICSTCC), pp. 515-518, http://doi.org/10.1109/ICSTCC52150.2021.96073102021.</p> |
| <p>V8 M. Gavrilesu, "A supervised generative model for efficient rendering of medical volume data," in 2020 International Conference on e-Health and Bioengineering (EHB), pp. 1-4, 2020.</p> |
| <p>V9 M. Gavrilesu, "Efficient Exploration of 3D Medical Images Using Projected Isocontours," in 2019 E-Health and Bioengineering Conference (EHB), pp. 1-4, http://doi.org/10.1109/ehb47216.2019.8969969, 2019.</p> |
| <p>V10 M. Gavrilesu, "Representation of Partially-Occluded Structures in Regular Point Clouds from 3D Scanner Data using Vision-Based Modulation," in 2017 E-Health and Bioengineering Conference (EHB), pp. 539-542, 2017.</p> |
| <p>V11 M. Gavrilesu and F. Ungureanu, "Enhanced three-dimensional visualization of EEG signals," in 2015 E-Health and Bioengineering Conference (EHB), pp. 1-4, 2015.</p> |
| <p>V12 M. Gavrilesu, "Analysis of CT Data Using Parallel GPU architectures," in 2012 International Conference and Exposition on Electrical and Power Engineering, pp. 766-770, Oct. 2012.</p> |
| <p>Articol/studiu publicat în volumul unei manifestari științifice indexate în BDI</p> |
| <p>V13 C.-N. Buțincu, M. Gavrilesu, "CPU-GPU Parallelism Applied to Quality-Diversity Volume Rendering", <i>2024 28th International Conference on System Theory, Control and Computing (ICSTCC)</i>, pp. 576-581, 2024; http://doi.org/10.1109/ICSTCC62912.2024.10744686. (IEEE Xplore)</p> |
| <p>V14 M. Gavrilesu, "Improved Perceptual Representation of Isosurfaces from Volume Data Using Curvature-based Features", <i>2024 28th International Conference on System Theory, Control and Computing (ICSTCC)</i>, 2024. http://doi.org/10.1109/ICSTCC62912.2024.10744636 (IEEE Xplore)</p> |
| <p>V15 M. Gavrilesu, "Visual Identification of Volumetric Structures from 3D Medical CT Data Using Density and Visibility-based Quality Criteria", 2023 International Conference on e-Health and Bioengineering (EHB), pp. 359–367, In : <i>Advances in Digital Health and Medical Bioengineering</i>, Costin, H.N., Magjarević, R., Petroiu, G.G. (eds.), IFMBE Proceedings, vol 111. Springer, Cham, Switzerland, https://doi.org/10.1007/978-3-031-62523-7_402023. (IEEE Xplore)</p> |
| <p>V16 M. Gavrilesu, F. Leon and S. -A. Floria, "Representation of Coherent Structures from Volume Data Using Quality-oriented Features and Genetic optimization," <i>2023 27th International Conference on System Theory, Control and Computing (ICSTCC)</i>, Timisoara, Romania, 2023, pp. 161-166, http://doi.org/10.1109/ICSTCC59206.2023.10308486. (IEEE Xplore)</p> |
| <p>V17 M. Gavrilesu, V. Manta, and E. Gröller, "Gradient-based classification and representation of features from volume data," in 15th International Conference on System Theory, Control and Computing, pp. 243-248, Oct. 2011. (IEEE Xplore)</p> |

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| | <p>V18 M. Gavrilesu, M. M. Malik, and M. E. Gröller, "Custom interface elements for improved parameter control in volume rendering," in 14th Int. Conf. on System Theory and Control, pp. 219-224, 2010. (IEEE Xplore)</p> |
| | <p>Lucrări susținute în cadrul unor manifestări științifice naționale/internaționale</p> |
| N | <p>N1 M. Gavrilesu, Neural Network-based Classifier for the Recognition and Rough Segmentation of Solid Waste from Images, 13PPthPPInternational Conference on Environmental Engineering and Management (ICEEM), Iasi, Romania, 2025.</p> |
| | <p>N2 M. Gavrilesu, F. Leon, Automatic Generation of Images from Hurricane Volume Data Through Evolutionary Optimization, 12th International Conference on Environmental Engineering and Management, Iasi, Romania, 2023.</p> |
| | <p>N3 C. Anton, C. Lisă, F. Leon, M. Gavrilesu, S.-A. Floria, S. Curteanu, Minimizing Nox Emissions in a Brick Manufacturing Process, 12th International Conference on Environmental Engineering and Management, Iasi, Romania, 2023.</p> |
| | <p>N4 M. Gavrilesu, S.-A. Floria, F. Leon, S. Curteanu, C. Anton, A Hybrid-Evolutionary Optimizer for Modelling the Process of Obtaining Bricks, International Conference on Machine Intelligence and Soft Computing Technologies, July 2023, Stockholm, Sweden 2023.</p> |
| | <p>N5 S.-A. Floria, M. Gavrilesu, F. Leon, S. Curteanu, C. Anton, Neuroevolution Based on Adaptive Ensembles of Biologically Inspired Optimization Algorithms Applied for Modeling a Chemical Engineering Process, International Conference on Computational Engineering and Applications, October 2023, Istanbul, Turkey, 2023.</p> |
| | <p>N6 M. Gavrilesu, D. Gavrilesu, Augmented Regression of Municipal Solid Waste Generation Rate Based on Economic and Social Data, 2nd International Conference on Sustainable Chemical and Environmental Engineering, Limassol, Cyprus, 2023.</p> |
| | <p>N7 M. Gavrilesu, Analysis of erosion patterns caused by atmospheric phenomena in high-resolution scans of limestone-based exterior walls, 10th International Conference on Environmental Engineering and Management, Iasi, Romania, 2019.</p> |
| | <p>N8 M. Gavrilesu, Representation of Dynamic Parameters from Multivariate Climate Data and Potential Applications in Pollutant Transport and Dispersion, 9th International Conference on Environmental Engineering and Management, Bologna, Italy, pp. 108-112, 2017.</p> |
| | <p>N9 M. Gavrilesu, Real-time visualization of four-dimensional multivariate meteorological phenomena, 7th International Conference on Environmental Engineering and Management, Vienna, Austria, pp. 207-212, 2013.</p> |
| | <p>N10 M. Gavrilesu, V. Manta, Processing of 3D medical data using volume visualization techniques, Proceedings of BringItOn 2012, Iasi, Romania, pp. 26, 2012.</p> |
| | <p>N11 M. Gavrilesu, V. Manta, Computation and representation of left-ventricular parameters from multidimensional MR cardiac data, Proceedings of Computer Graphics and Imaging 2010, Innsbruck, Austria, pp. 128-135, 2010.</p> |

3. Proiecte de cercetare-dezvoltare (P1, P2 etc.) pe bază de contract/ grant, precum și alte lucrări de cercetare-dezvoltare (F1, F2 etc.), după caz, prin care se aduc contribuții la dezvoltarea mediului educațional/ cultural/ economic/ social etc.

| Proiecte/ Contracte/ Granturi de cercetare-dezvoltare câștigate prin competiție națională/internațională | |
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| P | P1 Tangrama Medvolution, contract nr 730/10.07.2025, cod SMIS 338516 |
| | P2 Blockchain-based decentralized and self-sovereign identities (DIDSSI), Horizon Europe – Research and Innovation Programme, NGI Sargasso, grant nr. 101092887 |
| | P3 Contract tip PRNE-P1-CDI, nr. 737/ 24.07.2025, etapa 1, cod SMIS 338593 |
| | P4 DIGITAL-2021-EDIH-01, eDIH-DIZ, cod SMIS 323036. |
| | P5 HRIA –Hub Român de Inteligență Artificială, Contract PCIDIF nr. G 2025 -22801/390012, codSMIS 351416. |
| | P6 VolEvol, Generation of Meaningful Representations of Volume Data Through Evolutionary Learning, H2020-EU.2.1.1., nr. 951911, 2023-2024. (Director proiect) . |
| | P7 Transforming Europe through doctoral talent and skills recognition – DocTalent4EU, HORIZON-WIDERA-2022- ERA-01-ID 101095292, 2022-2024. |
| | P8 taRgeted thErapy for adVanced colorEctal canceR patients, REVERT - H2020-BHC-2019 Project ID 848098, 2020-2024. |
| | P9 Natural sense of vision through acoustics and haptics-Sound of Vision-, H2020-P5-PHC-2014 ID 643636, 2015-2017. |
| | P10 Recovered paper sorting with innovative technologies - SORT-IT, FP7-ENV-2007-1, 2008-2011. |
| | P11 HAVOC – De la om la virus. Algoritmi de optimizare cu aplicatii in ingineria chimica. PN-III-P4-ID-PCE-2020-0551, no. 91/2021, 2021 - 2023. |
| | P12 DigitAll: Innovation Center for Artificial Intelligence, GI-TD-DigitAll-03/2022, 2022-2023. |
| | P13 Proreta 5 - AI in Motion, 10118/ 16.05.2019, Continental Automotive Romania, 2019-2021. |
| | P14 Modelarea dinamicii pesticidelor in produse vegetale si estimarea riscurilor asupra sanatatii umane(MODPEST), PN-III-P2-2.1-PED-2016-1662, 2017-2018. |
| | P15 Ecuatii neliniare de evolutie-aspecte teoretice si aplicatii la stiintele vietii si ale mediului, PNII IDEI, nr. 447/2009, 2009-2011. |
| | P16 Modelare si conducere automata utilizand instrumente ale inteligentei artificiale pentru aplicatii in chimie si inginerie de proces, PNII parteneriate, nr.71006/2007, 2007-2010. |
| | P17 Tehnici ale inteligentei artificiale aplicate proceselor de sinteza si complexare ale polisiloxanilor functionalizati, Grant CNCSIS, cod 225, 2006-2008. |
| | P18 Noi aplicatii ale instrumentelor inteligentei artificiale in modelarea si estimarea unor proprietati fizico-chimice, PN II IDEI nr.64/2007, 2007-2010 |