

Curriculum Vitae



Associate Professor Alexandra Băicoianu
Transilvania University of Brasov
Faculty of Mathematics and Computer Science
Email: a.baicoianu@unitbv.ro
Tel: 0721322324
<https://orcid.org/0000-0002-1264-3404>

Degrees and diplomas:

- 2017 – Ph.D. in Computer Science from Babeş-Bolyai University in Cluj-Napoca, Faculty of Mathematics and Computer Science, România.
Doctoral Thesis Title: *Some other issues in discrete optimization*
Supervisor: Professor Militon Feñtiu
- 2008 – Master’s Degree in Algorithms and Software Products from Faculty of Mathematics and Computer Science, Transilvania University of Braşov, România.
Dissertation Title - *Distributed Algorithms*
Supervisor: Professor Ernest Scheiber
Graduation average: 10 / 10, Dissertation: 10 / 10.
- 2007 – Bachelor's degree in Mathematics and Computer Science, Faculty of Mathematics and Computer Science, Transilvania University of Braşov, România.
Thesis Title - *Numerical Methods for Solving Differential Equations: Finite Element Method and FreeFem++*
Supervisor: Professor Ernest Scheiber
Graduation average: 9.53 / 10, Thesis: 10 / 10.

Professional experience:

- 2024 – present, Associate Professor teaching various specialized courses at both undergraduate and master's levels, as well as taking on roles as a member or leader in research projects in the field of applied Computer Science.
- 2017 – 2024, Lecturer teaching different courses like *Fundamental Algorithms, Standard to Modern C++, Cloud-Native Applications, C++/Python Programming for Engineers, Object-Oriented Programming in Java, Formal Languages and Compilers* within the Department of Mathematics and Computer Science, Transilvania University of Braşov, România.
- 2016 – present, Siemens Industry Software, Department of Research and Technology
Engaged in research activities within various national and international projects.
- 2013 – 2014, C++ Trainer for Internships Programs, Route 66 Company
The role encompasses leading training sessions for groups of employees, crafting training programs, and assessing the records of these sessions.
- 2008 – 2017, Assistant professor teaching various seminars/laboratories on *Graph Algorithms, Formal Languages and Compilers, Artificial Intelligence, Compilation Techniques, Algorithms and Data Structures* within the Department of Mathematics and Computer Science, Transilvania University of Braşov, România.

Managerial experience:

- Coordinator of the *Curious Minds AfterSchool* program – designed to provide support for those without prior computer science courses in high school or lacking sufficient information in the field. Weekly sessions are planned with focused exercises on fundamental algorithms.
- 2023 – present, Coordinator of the Applied Computer Science study program from Faculty of Mathematics and Computer Science, in charge of finalizing the curriculum plan and updating the courses contents.
- 2024 – present, Vice Dean, overseeing student affairs, internationalization, and quality assurance.

Research projects

- SOL-2024 - 21 – IMINT, 2024 – 2026, a national (Romanian) project SOLUTIONS entitled IMage INTelligence for the Black Sea, member
- AI4RISK, 2024 – 2026, a national (Romanian) project SOLUTIONS entitled Platform for fusion and management of multi-source data collections exploitable by artificial intelligence models for the estimation and predictive analysis of risk situations, member
- SEEN, 2024 – 2026, Erasmus+ KA220-HED, member
- Romanian Excellence Center on Artificial Intelligence on Earth Observation Data for Agriculture (AI4AGRI), 2022 - 2025, member
- Digital Technologies and Artificial Intelligence (AI) solutions (DITARTIS), 2022 - 2025, Partner Leader from Siemens Industry Software
- New modular Electrical architecture and digital platform to Optimise large battery systems on SHIPs (NEMOSHIP), 2023 - 2026, member
- Intelligent Motion Control under Industry 4.E (IMOCO4E), 2021 - 2024, member
- Driver-In-the-Loop SIMulation for safety-critical testing scenarios of Electric Vehicles, 2020 - 2022, member
- Powerful Advanced N-level Digital Architecture for models of electrified vehicles and their components (PANDA), 2018 - 2022, member
- Dezvoltarea unei platforme HIL pentru testarea bateriilor unui vehicul urban electric (URBIVEL), 2017 - 2020, member
- High-Performance Computing of Personalized Cardio-Vascular Component Models (HEART), 2012 - 2016, PN-II-PT-PCCA-2011-3.2-1229, member

Representative scientific publications

- S. Catrina, A. Baicoianu - Quantum Tunneling: From Theory to Error-Mitigated Quantum Simulation, *Advanced Quantum Technologies*, 2024, <https://onlinelibrary.wiley.com/doi/10.1002/qute.202400163>, Q1
- S. Y. Shin, F. Pastore, D. Bianculli, A. Baicoianu - Towards Generating Executable Metamorphic Relations Using Large Language Models, 2024, QUATIC conference
- I.C. Plajer, A. Băicoianu, L. Majercsik, M. Ivanovici - Multisource Remote Sensing Data Visualization using Machine Learning, *IEEE Transactions on Geoscience and Remote Sensing (TGRS)*, 2024, Q1
- Băicoianu, C.M Pacurar, M. Paun - A Concretization of an Approximation Method for Non-Affine Fractal Interpolation Functions, *Mathematics*, 2021, <https://doi.org/10.3390/math9070767>, Q1

- R. Bocu, A. Băicoianu, A. Kerestely - An Extended Survey Concerning the Significance of Artificial Intelligence and Machine Learning Techniques for Bug Triage and Management, IEEE Access, 2023, DOI 10.1109/ACCESS.2023.3329732, Q2
- Vântu, A. Vasilescu, A. Băicoianu - Medical Emergency Department Triage Data Processing using a Machine-Learning Solution, Heliyon, 2023, <https://doi.org/10.1016/j.heliyon.2023.e18402>, Q2
- D.S. Caliman, V. David, A. Băicoianu - An Analysis of Improving Bug Fixing in Software Development, In Proceedings of the 18th International Conference on Software Technologies – ICISOFT, 2023, SciTePress, DOI: 10.5220/0012119500003538, Q2 (B)
- Kerestely, A. Băicoianu, R. Bocu - A research study on running machine learning algorithms on Big Data with Spark, The 14 International Conference on Knowledge Science Engineering and Management, 2021, https://link.springer.com/chapter/10.1007/978-3-030-82136-4_25, Q2 (B)
- A. Băicoianu - About innovation and optimization with Logical Analysis of Data and WEKA Proceedings of the 28th International Business Information Management Association Conference - Vision 2020: Innovation Management, Development Sustainability, and Competitive Economic Growth, ISBN: 978-0-9860419-8-3, WOS:000392785700416, Q2 (B)
- I. C. Plajer, A. Băicoianu, L. Majercsik, M. Ivanovici - NDVI Computation from Hyperspectral Images, 2023 13th Workshop on Hyperspectral Imaging and Signal Processing: Evolution in Remote Sensing (WHISPERS), DOI: 10.1109/WHISPERS61460.2023.10431225
- I. C. Plajer, A. Băicoianu, L. Majercsik - AI-Based Visualization of Remotely-Sensed Spectral Images, International Symposium on Signals, Circuits and Systems (ISSCS), 2023, DOI 10.1109/ISSCS58449.2023.10190908