

PERSONAL INFORMATION

Alexandru CIOBOTARU



📍 George Barițiu Street, no. 26-28, 400027, Cluj-Napoca, Romania

✉ alexandru.ciobotaru@aut.utcluj.ro

🆔 ORCID: [0009-0007-6702-0961](https://orcid.org/0009-0007-6702-0961)

WORK EXPERIENCE

2023 – Ongoing

Teaching Assistant

Department of Automation, Applied Informatics and Intelligent Systems, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca, Romania. <https://aut.utcluj.ro/>

Research, development and dissemination activities:

- **Research Interests:** Medical Cyber-Physical Systems, Machine Learning, Deep Learning, Federated Learning, Predictive Maintenance.
- **Research Group :** Dependable Systems (DeSy)

Teaching and assessment activities for laboratory work for the following disciplines:

- Fundamentals of Computational Systems, Applied Informatics – 1<sup>st</sup> Year
- Languages and Algorithms for Intelligent Systems – 2<sup>nd</sup> Year
- Information Technologies – 3<sup>rd</sup> Year
- Computer Programming, Data Structures and Algorithms - Postgraduate Program "Computer Science and Information Technology"

2021 – 2025

Software Engineer

UMT Software, a North Highland Company, Calea Turzii Street, no. 178K, 400491, Cluj-Napoca, România. <https://www.northhighland.com/>

Web application development for strategic portfolio management and enterprise architecture.

Stack:

- Backend – ASP.NET Core, Web API
- Frontend – JavaScript, TypeScript, React
- Database Management – SQL

EDUCATION AND TRAINING

2023 – Ongoing

PhD Student in Systems Engineering

EQF Level 8

Department of Automation, Applied Informatics and Intelligent Systems, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca, Romania, <https://aut.utcluj.ro/>

- **Thesis:** Dependable Artificial Intelligence in Health Cyber-Physical Systems
- **Scientific supervisor:** Prof. Eng. Liviu Miclea, PhD

2021 – 2023

Master of Science in Systems Engineering

EQF Level 7

Department of Automation, Applied Informatics and Intelligent Systems, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca, Romania, <https://aut.utcluj.ro/>

- **Degree:** Master of Science (M.Sc.)
- **Specialization:** Applied Informatics in Complex Systems Engineering (IAISC)
- **Dissertation Thesis:** Towards Detecting, Classifying and Recommending Soft Biometric Facial Traits using Convolutional Neural Networks, Genetic Algorithms and Computer Vision
- **Scientific supervisor:** Assoc. Prof. Eng. Dan Goța, PhD

2017 – 2021

### Bachelor's in Systems Engineering

EQF Level 6

Department of Automation, Applied Informatics and Intelligent Systems, Faculty of Automation and Computer Science, Technical University of Cluj-Napoca, Romania, <https://aut.utcluj.ro/>

- **Degree:** Engineer
- **Specialization:** Automation and Applied Informatics with instruction in English
- **Thesis:** Facial Features Extraction using Deep Neural Networks and Computer Vision
- **Scientific supervisor:** Assoc. Prof. Eng. Dan Goța, PhD

2013 – 2017

### High School

EQF Level 5

Decebal National College, 1 Decembrie 1918 Street, no. 22, 330025, Deva, Romania, <https://www.cnd.ro/>

- **Degree:** Baccalaureate
- **Specialization :** Mathematics-Informatics bilingual in English

#### PERSONAL SKILLS

Mother tongue Romanian

Alte limbi străine cunoscute

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Certificate in Advanced English (CAE), No. 53117494, Cambridge University, UK					
French	A2	A1	A1	A2	A2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
Common European Framework of Reference for Languages

Communication skills

- Solid communication and interpersonal skills developed through teaching activities, team-based projects, and participation in scientific conferences.

Organisational / managerial skills

- Time and task management in complex projects.
- Analytical thinking and results-oriented approach.

Job-related skills

- Programming languages: C/C++, C#, Javascript, Typescript, Python, MatLab, Java.
- Solid knowledge of Machine Learning, Deep Learning and data science related techniques and frameworks: TensorFlow, PyTorch, NumPy, Pandas, OpenCV, Matplotlib etc.
- Proficiency in Microsoft Office™: Word, Excel, PowerPoint.
- Research, development and publication of scientific work.

#### ADDITIONAL INFORMATION

Publications

16 scientific papers published in journals or presented at international and national conferences, of which:

- 4 papers published in journals indexed in Clarivate Web of Science.
- 3 papers published in conference proceedings indexed in Clarivate Web of Science.
- 9 papers published in international databases (BDI).

Selected publications:

- **Ciobotaru A.**; Corches C.E.; Goța D.I.; Miclea L.C. "Deep Learning and Federated Learning in Breast Cancer Screening and Diagnosis: A Systematic Review". IEEE Access, 2025, doi: <https://doi.org/10.1109/ACCESS.2025.3560211> (indexed Clarivate Web of Science, Q2 ENGINEERING & ELECTRICAL & ELECTRONIC, open access).

- **Ciobotaru A.**; Bota M.A.; Goța D.I.; Miclea L.C. „Multi-Instance Classification of Breast Tumor Ultrasound Images Using Convolutional Neural Networks and Transfer Learning”. Bioengineering, 2023, 10, 1419, doi: <https://doi.org/10.3390/bioengineering10121419>. (indexed Clarivate Web of Science Q2 ENGINEERING & BIOMEDICAL, open access).
- **Ciobotaru A.**; Corcheș C.E.; Goța D.I.; Miclea L.C. “An Explainable Deep Learning-Based Predictive Maintenance Solution for Air Compressor Condition Monitoring”. Sensors, 25(18):5797, 2025, doi: <https://doi.org/10.3390/s25185797> (indexed Clarivate Web of Science Q2 ENGINEERING & ELECTRICAL & ELECTRONIC, open access).
- Miclea L.C.; **Ciobotaru A.**; Misaroș M.; Corches C., "Dependable Cyber-Physical Systems: concepts, challenges and case studies". Journal of Engineering Sciences and Innovation (JESI), Volume 8, Issue 4/2023, ISSN 2601-6699, p.p. 433-447, doi: <http://doi.org/10.56958/jesi.2023.8.4.433> (indexat BDI).
- **Ciobotaru A.**; Gota D.I.; Covrig T.; Miclea L.C. „Reliable Breast Cancer Detection from Ultrasound Images using Image Segmentation”. International Conference on Automation Quality, Testing and Robotics (AQTR), Cluj-Napoca, Romania, 2024, doi: <https://doi.org/10.1109/AQTR61889.2024.10554200> (indexed Clarivate Web of Science Proceedings).
- **Ciobotaru A.**; Gota D.I.; Puscasiu A.; Stan O.; Fanca A.; Domnuta C.; Valean H.; Miclea. L.C. "Deep Neural Networks and Computer Vision for Real-Time Facial Landmark Detection". International Conference on Electrical, Computer and Energy Technologies (ICECET), Cape Town, South Africa, 2021, pp. 1-6, doi: <https://doi.org/10.1109/ICECET52533.2021.9698811> (indexed Clarivate Web of Science Proceedings).
- **Ciobotaru A.**; Gota D.I.; Puscasiu A.; Stan O.; Fanca A.; Domnuta C.; Valean H.; Miclea. L.C. "Comparing Deep Learning and Genetic Algorithms Techniques for Age and Gender Classification,". International Conference on Electrical, Computer, Communications and Mechatronics Engineering (ICECCME), Tenerife, Canary Islands, Spain, 2023, pp. 1-6, doi: <https://doi.org/10.1109/ICECCME57830.2023.10253422>. (indexed BDI).

**Books**

- Corches C.; **Ciobotaru A.**; Misaroș M.; Miclea L.C. „Fundamentele programarii in C: de la bazele teoretice la implementare”, UTPRESS Publishing House, Cluj-Napoca, ISBN 978-606-737-682-1, pg. 111, 2023.

**Reviewer**

Journals indexed in Clarivate Web of Science:

- IEEE Access, ISSN: 2169-3536
- Journal of Experimental & Theoretical Artificial Intelligence, Taylor & Francis, ISSN: 0952-813X
- BMC Cancer, Springer Nature Link, eISSN: 1471-2407
- Frontiers in Oncology, ISSN: 2234-943X