



## Alexandra-Ioana Albu

 **LinkedIn:** <https://ro.linkedin.com/in/alexandra-albu-978b98151>

### WORK EXPERIENCE

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#### University research assistant

**Babeş-Bolyai University, Faculty of Mathematics and Computer Science** [ 10/2020 – Current ]

Member in the *WeaMyL* Project ("*WeaMyL - Enhancing the performance and reliability of national weather warning systems by use of deep learning techniques applied on radar, satellite and ground meteorological observations*"), supported by the Norway Grants Program 2014-2021 (1.084.919 EUR), website: <https://weamyl.met.no/>

#### Publications:

- Gabriela Czibula, Andrei Mihai, Alexandra-Ioana Albu, Istvan-Gergely Czibula, Sorin Burcea, Abdelkader Mezghani, *AutoNowP*: An approach using deep autoencoders for precipitation nowcasting based on weather radar reflectivity prediction. *Mathematics, Special Issue on Computational Optimizations for Machine Learning*, 2021, 9(14):1653, <https://doi.org/10.3390/math9141653>
- Alexandra-Ioana Albu, Gabriela Czibula, Andrei Mihai, Istvan-Gergely Czibula, Sorin Burcea, Abdelkader Mezghani. *NeXtNow*: A Convolutional Deep Learning Model for the Prediction of Weather Radar Data for Nowcasting Purposes. *Remote Sensing*, 2022, 14(16): 3890, <https://doi.org/10.3390/rs14163890>
- Alexandra-Ioana Albu. Improving radar echo extrapolation models using autoencoder-based perceptual losses. *27th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems 2023, accepted*.

#### University research assistant

**Babeş-Bolyai University, Faculty of Mathematics and Computer Science** [ 03/2021 – Current ]

Member in the *QuaDeep* Project ("*QuaDeep - Enhancing the quality of software systems using deep learning models for defects prediction and detection*") - Exploratory research project financed within PNCDI III - project number PN-III-P4-ID-PCE-2020-0800 (1.198.032 RON), website: <https://www.cs.ubbcluj.ro/quadeep/>

#### Teaching Assistant (PhD Student)

**Babeş-Bolyai University** [ 10/2020 – Current ]

Laboratories and seminars for the following courses:

- *Data Structures and Algorithms* (labs and seminars)
- *Functional and Logic Programming* (labs)
- *Development Methods for Intelligent Systems* (labs)
- *Fundamentals of Programming* (labs)
- *Object-Oriented Programming* (labs)

#### Research assistant

**Romanian Institute of Science and Technology** [ 11/2018 – 09/2020 ]

Member in the *DeepRiemann* Project ("*Riemannian Optimization Methods for Deep Learning*"), co-funded by the European Regional Development Fund and the Romanian Government through the Competitiveness Operational Programme 2014-2020 (8.689.500 RON), website: <https://deepriemann.rist.ro/>

#### Publications:

- Alexandra-Ioana Albu, Alina Enescu, and Luigi Malagò. Tumor detection in brain MRIs by computing dissimilarities in the latent space of a variational autoencoder. In *Proceedings of the Northern Lights Deep Learning Workshop*, vol. 1, pp. 1-6. 2020, <https://doi.org/10.7557/18.5172>.

- Alexandra-Ioana Albu, Alina Enescu, and Luigi Malagò. Improved Slice-wise Tumour Detection in Brain MRIs by Computing Dissimilarities between Latent Representations. 2020 KDD Workshop on Applied Data Science for Healthcare, August 24, 2020, San Diego, USA.
- Alexandra-Ioana Albu, Alina Enescu, and Luigi Malagò. Detection of Tumours in Brain MRIs with Variational AutoEncoders. ECML PKDD 2020 Workshop on Machine Learning for Pharma and Healthcare Applications, September 14, 2020, Ghent, Belgium.

### **Machine Learning Intern**

**Romanian Institute of Science and Technology** [ 07/2017 – 09/2017 ]

Internship in the *Machine Learning and Optimization* group. Worked on a project on image generation using Variational Autoencoders.

### **Teacher in the “Hai la Olimpiadă!” program**

[ 03/2016 – 03/2016 ]

Held a seminar on inequalities for 8th grade students in the “*Hai la Olimpiadă!*” mathematics program

## **EDUCATION AND TRAINING**

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### **PhD Student in Computer Science**

**Faculty of Mathematics and Computer Science, Babeş-Bolyai University** [ 2020 – Current ]

City: Cluj-Napoca

Country: Romania

### **Master's Degree in Applied Computational Intelligence**

**Faculty of Mathematics and Computer Science, Babeş-Bolyai University** [ 2018 – 2020 ]

City: Cluj-Napoca

Country: Romania

### **Psycho-pedagogical training - Level II**

**Babeş-Bolyai University** [ 2018 – 2020 ]

City: Cluj-Napoca

Country: Romania

### **Bachelor's Degree in Computer Science**

**Faculty of Mathematics and Computer Science, Babeş-Bolyai University** [ 2015 – 2018 ]

City: Cluj-Napoca

Country: Romania

### **Psycho-pedagogical training - Level I**

**Babeş-Bolyai University** [ 2015 – 2018 ]

City: Cluj-Napoca

Country: Romania

### **Baccalaureate Diploma**

**“Lucian Blaga” High School** [ 2011 – 2015 ]

City: Cluj-Napoca

Country: Romania

## **LANGUAGE SKILLS**

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Mother tongue(s): **Romanian**

**Other language(s):**

**English**

**LISTENING C2 READING C2 WRITING C2**

**SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2**

**French**

**LISTENING B2 READING B2 WRITING B2**

**SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1**

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

**AWARDS**

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**Special Scholarship for Scientific Activity awarded by Babeş-Bolyai University**

[ 2019 – 2020 ]

**Scholarship for academic results awarded by Babeş-Bolyai University**

[ 2015 – 2020 ]

**Romanian National Mathematical Olympiad**

[ 2011 – 2015 ]

One silver medal (2014) and three bronze medals (2011, 2012 and 2013)

**PROJECTS**

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**Contributor - Argo open source deep learning library**

Library implementing multiple deep learning models using TensorFlow and Sonnet available at: <https://github.com/rist-ro/argo>