

PERSONAL INFORMATION Ileni Tudor Alexandru

WORK EXPERIENCE

- Oct 2022 – Present **Researcher Assistant, UBB**
Proiectul PN-III-P2-2.1-PED-2021-3120 cu titlul "VinEye: cartografierea colaborativa a viilor cu roboti autonomi"
- Oct 2017 – Present **Computer programmer/AI Researcher**
Tvarita S.R.L, Cluj-Napoca (Romania)
- Computer vision research (9 published papers)
 - Facial analysis: face/hair segmentation, iris/pupil detection, 3D reconstruction
 - Deep Learning optimization: knowledge distillation, ensembles, conditional computing
 - OCR - extract data from structured documents.
 - Deploying face analysis modules to industry clients, for large-scale applications (desktop kiosk, iOS tablets)
 - MachineLearnig: Keras, TensorFlow, PyTorch, NumPy
 - Deploy: CoreML, OpenVino, Mediapipe, AWS lambdas
 - Programming language: C++, python, ObjectiveC
- Oct 2019 - Present **Teaching Assistant**
Babes Bolyai University (UBB), Computer Science Faculty, Cluj-Napoca, Romania
- Computer Systems Architecture, lab semester 1
 - Object Oriented Programming, lab semester 2
- Oct 2023 - Present **Teaching Assistant**
Responsible for the course "Developing innovative products" from semester 5.
- For a semester the students are developing a startup-like project. With my colleague (Alexandru Roja) the students cover the business side: user persona, product needs, market research, unique value proposition. I cover the following tech topics: agile project management, UI/UX, AI, cloud, analytics, habit-forming products.
- Oct 2021 - Present **CS InnoHUB Organizer**
UBB, Computer Science Faculty
- Organize events and workshops for innovative students of Mathematics and Computer Science Faculty.
 - With the support of industry mentors and Faculty resources, the students create innovative ideas with the potential to be materialized in startups.
- Oct 2021 - Jun 2023 **InnoChange Scout and Team Leader**
UBB, Cluj-Napoca (Romania)
- Document and research the projects with a commercial perspective in the research groups of the (UBB) faculties
 - Starting from December 2022, occupy the position of Scouts Team Leader. I was guiding and organizing the activity of the scouts within the project. The project

finished with the InnoFair project where all projects (Research and Startups were presented), and me being the event host.

- Jul 2017 – Aug 2017
Computer programmer
Recognos Company, Cluj-Napoca (Romania)
- Internship in machine learning
- Jul 2016 – Sep 2016
Computer programmer
NetMatch Company, Cluj-Napoca (Romania)
- Summer internship, web applications development

Personal project
(2020-Present)

reviziegaz.ro

Online tool (web-based, mobile PWA) which helps experts from the Energetic domain to organize the work, and tasks, generate bills, and the necessary documents for their clients. The application is installed and delivered. The product was built for a duration of one year and is up and running since 2020 (so far, installed at one local company). The ownership was registered to the national authority (ORDA).

- technology: JS, angular-ionic, PWA, firebase, bootstrap

EDUCATION AND TRAINING

Oct 2019 - Present

Ph.D. student

Babes-Bolyai University Faculty of Mathematics and Computer Science, Cluj-Napoca (Romania)

Research domain: image processing, deep learning, computer vision, facial analysis, network optimization

Oct 2017 - Jul 2019

Master at Applied Computational Intelligence

Babes-Bolyai University Faculty of Mathematics and Computer Science, Cluj-Napoca (Romania)

- Machine learning, statistical methods, advanced methods of data analysis, simulations methods

Oct 2014 – Jul 2017

Bachelor in Computer Science

Babes-Bolyai University Faculty of Mathematics and Computer Science, Cluj-Napoca (Romania)

- Fundamentals of Computer Science (Fundamentals of Programming, Algorithms and Data Structures, Object-Oriented Programming, Algorithms of Graph Theory, Advanced Programming Methods, Databases, Parallel and Distributed Programming) - Computer systems and architectures (Computer System Architecture, Operating Systems, Computer Networks, Formal Languages and Compiling Techniques)

- Fundamentals of Mathematics (Mathematical Analysis, Algebra, Geometry, Dynamical Systems, Probability and Statistics, Numerical Calculus)

Sep 2010– Jun 2014

Computer Science Student

"Liviu Rebreanu" National College, Bistrita

General :

- Fundamentals of Programming, Object-Oriented Programming, Databases, Mathematics

PERSONAL SKILLS

Mother tongue(s) Romanian

Other languages (s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	B2
French	C1	B1	B1	B1	A2

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

Job-related skills

- Operating systems: Windows, Linux
- Machine learning: TensorFlow, Keras, PyTorch, OpenCV, CoreML, OpenVino, Mediapipe
- Programming Languages: Java, C#, Python, C/C++, ObjectiveC, HTML, CSS, Prolog, Lisp, React, Angular
- Version Control Systems: Git, SVN
- Relational databases: MS Access, SQL Server, MS SQL, PostgreSQL

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem-solving
Proficient User	Proficient User	Proficient User	Basic user	Independent user

ADDITIONAL INFORMATION

Publications:

1. Tudor Alexandru Ileni, Adrian Sergiu Darabant, Diana-Laura Borza, Alexandru-Ion Marinescu "DynK-hydra: improved dynamic architecture ensembling for efficient inference", *Complex & Intelligent Systems*, 2022
2. Borza, D. L., Ileni, T. A., Marinescu, A. I., & Darabant, S. A. (2023). Teacher or supervisor? Effective online knowledge distillation via guided collaborative learning. *Computer Vision and Image Understanding*, 228, 103632.
3. Borza, D. L., Darabant, A. S., Ileni, T. A., & Marinescu, A. I. (2022). Effective Online Knowledge Distillation via Attention-Based Model Ensembling. *Mathematics*, 10(22), 4285.
4. Ovidiu-Mihai, V., Tudor-Alexandru, I., & Petrescu, M. (2022, September). Using BERT to extract emotions from personal journals. In *2022 IEEE 18th International Conference on Intelligent Computer Communication and Processing (ICCP)* (pp. 89-94). IEEE.
5. Nistor, Sergiu Cosmin, Tudor Alexandru Ileni, and Adrian Sergiu Dărăbant. "Automatic Development of Deep Learning Architectures for Image Segmentation." *Sustainability* 12.22 (2020): 9707.
6. A. I. Marinescu, A. S. Darabant and T. A. Ileni, "A Fast and Robust, Forehead-Augmented 3D Face Reconstruction from Multiple Images using Geometrical Methods," *2020 International Conference on Software, Telecommunications and Computer Networks (SoftCOM)*, Split, Hvar, Croatia, 2020, pp. 1-6, doi: 10.23919/SoftCOM50211.2020.9238250.

7. I. Tudor-Alexandru, "Efficient iris segmentation and pupil detection for visagisme applications," 2020 IEEE 14th International Symposium on Applied Computational Intelligence and Informatics (SACI), Timisoara, Romania, 2020, pp. 000123-000128, doi: 10.1109/SACI49304.2020.9118833.
8. A. Ion Marinescu, T. Alexandru Ileni and A. Sergiu Darabant, "A Versatile 3D Face Reconstruction from Multiple Images for Face Shape Classification," 2019 International Conference on Software, Telecommunications and Computer Networks (SoftCOM), Split, Croatia, 2019, pp. 1-6, doi: 10.23919/SOFTCOM.2019.8903745.
9. Ileni, Tudor Alexandru, Diana Laura Borza, and Adrian Sergiu Darabant. "Fast In-the-Wild Hair Segmentation and Color Classification." *VISIGRAPP (4: VISAPP)*. 2019.
10. Borza, Diana, Tudor Ileni, and Adrian Darabant. "A deep learning approach to hair segmentation and color extraction from facial images." *International Conference on Advanced Concepts for Intelligent Vision Systems*. Springer, Cham, 2018
11. Bachelor thesis: Ileni Tudor-Alexandru, Dr. Lect. Sterca Adrian, *Face recognition using convolutional neural network*, Communication Session of Students from UBB University and UTCN University, June 2017.
12. Dissertation thesis: Ileni Tudor-Alexandru, supervisor Dr. Lect. Darabant Sergiu Adrian, *Analysis of facial features using computer vision*
13. Phd Thesis: Ileni Tudor-Alexandru, scientific supervisors Dr Prof Andreica Anca, Dr. Lect. Darabant Sergiu Adrian, *Development of Efficient Methods of Deep Learning in Computer Vision*

Awards:

- 2023 | Nominalized and winner of the Excellence Awards from Babes Bolyai University (as Ph.D. student). The award is given to students and academic staff who demonstrate excellence in their activity.
- Research Scholarship from UBB University during the academic year 2018-2019.
- First place at Communication Session of Students, June 2017, among UBB students. Conference link: <http://www.cs.ubbcluj.ro/scss/>

Extracurricular projects:

During my summer internship (2016) I was part of a team that developed a web application. My tasks were related both to the front and back ends of the application. We develop the project on C# and React. In this way, I was up-to-date with the latest technologies in web applications. I have learned Scrum methodology and how to work in a team.

For the bachelor thesis (*see publications*) I developed an application that was able to detect and recognize people in images. I have trained and tested a convolutional neural network whose architecture was inspired by the biological visual cortex. I have used, for training and testing, a database containing 600k images from 1700 people. To develop my modules, I used TensorFlow and NumPy (Python 3) for mathematics.

During my summer internship (2017) I develop classification software for documents. After extracting the text from a PDF document, we apply the TF-IDF formula, to associate each word with a real number. In this way, we create an array of features for each document and feed it to our computational learning model. After we try to learn from raw data, we apply some dimensionality reduction procedures like feature selection and feature reduction (Principal Component Analysis). We reach, in this way, an accuracy above 95%.

Current interest domain:

Machine learning, computer vision, Deep learning, Object-Oriented Programming, Entrepreneurship, Innovation