PERSONAL INFORMATION

Puiu Andrei

andrei.puiu@unitbv.ro

PROFESSIONAL EXPERIENCE

October 2024 - present

Assistant Professor

Transilvania University of Brașov – Faculty of Electrical Engineering and Computer Science, Department of Automation and Information Technology

- Parallel programming
- Data Science

August 2017 – present

Software Engineer

Siemens S.R.L., Advanta, 15 Noiembrie nr. 78, 500097, Brașov(www.siemens.ro)

- Development of algorithms and software solutions for medical devices
- Prototyping and validation.

July 2015 – July 2017

Internship

Siemens S.R.L., Corporate Technology – Brașov, Romania

- Development and validation of cardiovascular analysis models
- CUDA programming for computational efficiency.

June 2010 – August 2014

Volunteer

DAD International UK, British Camps Romania
Team leader

EDUCATION AND TRAINING

Nov 2019 – Sep.2024

Ph.D. in Systems Engineering

Transilvania University of Brașov

- Thesis: *Leveraging Self-Supervised Learning, Synthetic Data, and Trustworthy Artificial Intelligence for Innovative Cancer Care*

Oct 2017 – June 2019

Master's Degree in Systems Engineering

Transilvania University of Brașov

- Specialization: Advanced Systems in Automation and Information Technology

Oct 2013 – July2017

Bachelor's Degree in Systems Engineering

Bachelor's Degree in Systems Engineering

- Specialization: Automation and Applied Computer Science

Sep 2009 – July 203

High School

Dimitrie Ghika Technical College, Comănești, Bacău

PERSONAL SKILLS

Native language: Romanian

OTHER: English

Communication Skills

Strong communication skills acquired through work and leadership roles during volunteer experiences.

Organizational/Managerial Skills

- Developed ability to understand and structure tasks in a team environment.

Job-related Skills

- Data Science, Artificial Intelligence, Deep Learning / Machine Learning
- Software development, Big Data
- Research in medical imaging
- Python, image processing, CUDA parallel programming

Digital Competence

- Programming in Python, Matlab, C/C++

Other Skills

- Punctual, team player, eager to learn and improve

Driver's License

- Category B

ADDITIONAL INFORMATION

Scientific achievements

a) Awards

- **Innovation Radar Prize 2019**, Enabling Tech category – awarded by the European Commission
- **Romanian Research Gala 2023**, "Research Team" category – awarded by the Romanian Ministry of Research, Innovation, and Digitalization.

b) Scientific Achievements:

3 first-author ISI-indexed journal articles
1 co-authored book chapter with international publisher
14 co-authored ISI-indexed journal/conference publications
h-index: 9 (https://scholar.google.it/citations?user=Z4DsLw0AAAAJ&hl=en)

Journal articles indexed in ISI as author

1. **Puiu, A**., Gómez Tapia, C., Weiss, M. E. R., Singh, V., Kamen, A., & Siebert, M. (2024). Prediction uncertainty estimates elucidate the limitation of current NSCLC subtype classification in representing mutational heterogeneity. Scientific Reports, 14(1), 6779. https://doi.org/10.1038/s41598-024-57057-3. **(SRI: 1.836)**
2. **Puiu, A.**, Reaungamornrat, S., Pheiffer, T., Itu, L. M., Suciu, C., Ghesu, F. C., & Mansi, T. (2022). Generative Adversarial CT Volume Extrapolation for Robust Small-to-Large Field of View Registration. Applied Sciences, 12(6), 2944. https://doi.org/10.3390/app12062944. **(SRI: 0.91)**
3. **Puiu, A.**, Vizitiu, A., Nita, C., Itu, L., Sharma, P., & Comaniciu, D. (2021). Privacy-Preserving and Explainable AI for Cardiovascular Imaging. Studies in Informatics and Control, 30(2), 21–32. https://doi.org/10.24846/v30i2y202102 (SRI: 0.316)

Journal articles indexed in ISI as co-author

1. Ciusdel, C., Turcea, A., **Puiu, A.**, Itu, L., Calmac, L., Weiss, E., Margineanu, C., Badila, E., Passerini, T., Gulsun, M., & Sharma, P. (2018). TCT-231 An artificial intelligence based solution for fully automated cardiac phase and end-diastolic frame detection on coronary angiographies. Journal of the American College of Cardiology, 72(13), B96–B97. https://doi.org/10.1016/j.jacc.2018.08.1356.
2. Vizitiu, A., **Puiu, A.**, Reaungamornrat, S., & Itu, L. M. (2019). Data-Driven Adversarial Learning for Sinogram-Based Iterative Low-Dose CT Image Reconstruction. 2019 23rd International Conference on System Theory, Control and Computing (ICSTCC), 668–674. https://doi.org/10.1109/ICSTCC.2019.8885947.
3. Vizitiu, A., Nita, C. I., **Puiu, A.**, Suciu, C., & Itu, L. M. (2019). Privacy-Preserving Artificial Intelligence: Application to Precision Medicine. 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 6498–6504.

https://doi.org/10.1109/EMBC.2019.8857960.
4. Vizitiu, A., Nita, C. I., **Puiu, A.**, Suciu, C., & Itu, L. M. (2019). Towards Privacy-Preserving Deep Learning based Medical Imaging Applications. 2019 IEEE International Symposium on Medical Measurements and Applications (MeMeA), 1–6. https://doi.org/10.1109/MeMeA.2019.8802193.
5. Benedek, T., Ferent, I., Benedek, A., Cernica, D., Nita, C., **Puiu, A.**, Itu, L., Rapaka, S., Puneet, S., & Benedek, I. S. (2020). P1434 Evolution of coronary wall shear stress following implantation of bioabsorbable vascular scaffolds—First results of a 1-year follow-up pilot study. European Heart Journal - Cardiovascular Imaging, 21(Supplement_1), jez319.863. https://doi.org/10.1093/ehjci/jez319.863.
6. Ciusdel, C., Turcea, A., **Puiu, A.**, Itu, L., Calmac, L., Weiss, E., Margineanu, C., Badila, E., Berger, M., Redel, T., Passerini, T., Gulsun, M., & Sharma, P. (2020). Deep neural networks for ECG-free cardiac phase and end-diastolic frame detection on coronary angiographies. Computerized Medical Imaging and Graphics, 84, 101749. https://doi.org/10.1016/j.compmedimag.2020.101749.
7. Vizitiu, A., Niţă, C. I., **Puiu, A.**, Suciu, C., & Itu, L. M. (2020). Applying Deep Neural Networks over Homomorphic Encrypted Medical Data. Computational and Mathematical Methods in Medicine, 2020, 1–26. https://doi.org/10.1155/2020/3910250.
8. Nita, C.-I., **Puiu, A.**, Bunescu, D., Mihai Itu, L., Mihalef, V., Chintalapani, G., Armstrong, A., Zampi, J., Benson, L., Sharma, P., & Rapaka, S. (2022). Personalized Pre- and Post-Operative Hemodynamic Assessment of Aortic Coarctation from 3D Rotational Angiography. Cardiovascular Engineering and Technology, 13(1), 14–40. https://doi.org/10.1007/s13239-021-00552-9.
9. Ogrezeanu, I., Vizitiu, A., Ciușdel, C., **Puiu, A.**, Coman, S., Boldișor, C., Itu, A., Demeter, R., Moldoveanu, F., Suciu, C., & Itu, L. (2022). Privacy-Preserving and Explainable AI in Industrial Applications. Applied Sciences, 12(13), 6395. https://doi.org/10.3390/app12136395.
10. Ploscaru, V., Popa-Fotea, N.-M., Calmac, L., Itu, L. M., Mihai, C., Bataila, V., Dragoescu, B., **Puiu, A.**, Cojocaru, C., Costin, M. A., & Scafa-Udriste, A. (2022). Artificial intelligence and cloud based platform for fully automated PCI guidance from coronary angiography-study protocol. PLOS ONE, 17(9), e0274296. https://doi.org/10.1371/journal.pone.0274296.
11. Hatfaludi, Cosmin & Irina Andra, Tache & Ciușdel, Costin & **Puiu, Andrei** & Stoian, Diana & Itu, Lucian Mihai & Calmac, Lucian & Popa-Fotea, Nicoleta & Bătăilă, Vlad & Udriste, Alexandru. (2022). Towards a Deep-Learning Approach for Prediction of Fractional Flow Reserve from Optical Coherence Tomography. Applied Sciences. 12. 6964. 10.3390/app12146964.
12. Tache, I. A., Hatfaludi, C. A., **Puiu, A.**, Itu, L. M., Popa-Fotea, N. M., Calmac, L., & Scafa-Udriste, A. (2023). Assessment of the functional severity of coronary lesions from optical coherence tomography based on ensembled learning. BioMedical Engineering Online, 22(1). https://doi.org/10.1186/s12938-023-01192-x
13. Scafa-Udriște, A., Itu, L., **Puiu, A.**, Stoian, A., Moldovan, H., & Popa-Fotea, N.-M. (2023). In-stent restenosis in acute coronary syndrome—a classic and a machine learning approach. Frontiers in Cardiovascular Medicine, 10. https://doi.org/10.3389/fcvm.2023.1270986
14. Singh, V., Chaganti, S., Siebert, M., Rajesh, S., **Puiu, A.,** Gopalan, R., Gramz, J., Comaniciu, D., & Kamen, A. (2025). Deep learning-based identification of patients at increased risk of cancer using routine laboratory markers. Scientific Reports, 15(1), 12661. https://doi.org/10.1038/s41598-025-97331-6

Book chapter

1. Felix Meister, Helene Houle, Cosmin Nita, **Andrei Puiu**, Lucian Mihai Itu, Saikiran Rapaka, Data-driven reduction of cardiac models, chapter in Artificial Intelligence for Computational Modeling of the Heart, pp. 117-160, 2020, Academic Press