




# Armand Nicolicioiu

 <https://armandnicolicioiu.github.io/>


 armand.nicolicioiu@gmail.com  +40746900388

## Education

2020 – 2022




**M.Sc. in Artificial Intelligence**  
*University of Bucharest*

-  **Thesis:** Research in out-of-distribution generalization by diversifying Attention heads in Vision Transformers.

2015 – 2020



**B.Sc. in Computer Science and Engineering**  
*Politehnica University of Bucharest*

-  **Thesis:** Research in meta-learning and few-shot classification using Graph Neural Networks and Attention mechanisms.

## Work Experience

10/2023 –

Present



**Research Intern**  
*ETH Zürich, Switzerland*

- Research on **semi-supervised learning** in the Statistical Machine Learning group led by Fanny Yang.

05/2023 –

09/2023



**Research Intern**  
*Idiap Research Institute, Martigny, Switzerland*

- Research on the **robustness** of **diversified** model ensembles and on the **generalization** properties of neural networks. Supervisor: Damien Teney.

11/2022 –

03/2023



**Software Development Engineering Intern**  
*Amazon, Tübingen, Germany*

- Improved an evaluation  **framework** for assaying **out-of-distribution generalization** in the Causal Representation Learning team.

06/2022 –

09/2023



**Software Engineering Intern**  
*Google, Zürich, Switzerland*

- Used **large language models** for entity linking in YouTube videos.
- Generated **realistic synthetic data** to complement existing training sets.

10/2020 –

11/2021



**Machine Learning Researcher**  
*dotLumen, Cluj-Napoca, Romania*

- Prototyped a headset to **help blind persons** be more independent.
- Multi-modal **environment understanding** using Computer Vision.

07/2019 –

09/2019



**Software Engineering Intern**  
*Microsoft, Redmond, WA, USA*

- Designed and built a fast **generic trending system** for **large scale data**.
- **Microservices pipeline** for ingestion, processing, storing and retrieval.

07/2018 –



09/2018



**Software Engineering Intern**  
*Microsoft, Redmond, WA, USA*

- Improved Azure's **real-time telemetry** monitoring system by generating **recommendations** that lead to a **faster resolution of alerts**.


## Work Experience (continued)

- 01/2017 – 11/2017  **Machine Learning and Computer Vision Junior Researcher**  
*Arnia Software, Bucharest, Romania*
- Developed algorithms for **improving the HDR camera mode** of phones.
- 07/2016 – 10/2016  **Machine Learning Engineer Intern**  
*Sparktech Software, Bucharest, Romania*
- Built a **recommender system** for a coupon site from scratch.

## Research Publications

- 1 L. Scimeca, A. Rubinstein, **A. M. Nicolicioiu**, D. Teney, and Y. Bengio, “Leveraging diffusion disentangled representations to mitigate shortcuts in underspecified visual tasks,” *NeurIPS Workshop on Diffusion Models*, 2023.
- 2 **A. M. Nicolicioiu**, A. L. Nicolicioiu, B. Alexe, and D. Teney, “Learning diverse features in vision transformers for improved generalization,” *ICML Workshop on Spurious Correlations, Invariance, and Stability (SCIS)*, 2023.
- 3 L. Scimeca, A. Rubinstein, D. Teney, S. J. Oh, **A. M. Nicolicioiu**, and Y. Bengio, “Shortcut bias mitigation via ensemble diversity using diffusion probabilistic models,” *Under submission at CVPR*, 2023.
- 4 D. Teney, **A. M. Nicolicioiu**, V. Hartmann, and E. Abbasnejad, “Neural redshift: Random networks are not random functions,” *Under submission at CVPR*, 2023.
- 5 N. Miolane, M. Caorsi, U. Lupo, *et al.*, “Iclr 2021 challenge for computational geometry & topology: Design and results,” *arXiv preprint arXiv:2108.09810*, 2021.

## Teaching Experience

- 2016 – 2021  **Undergraduate Teaching Assistant**  
*Politehnica University of Bucharest*
- Teaching assistant for **Data Structures** and **Computer Programming** classes.
  - I **taught laboratory classes** and helped students solve the exercises.
  - Prepared complex assignments for the entire class (150+ students).
  - Proposed questions for the final exam and helped evaluate and grade.

## Awards and Achievements

- 2023 • **Poster Award & Scholarship** at Synapse AI Symposium by Bending Spoons in Milan for my research project on model diversity.
- 2022 • **Best Poster Award** at Romanian AI Days conference for presenting my Master’s thesis on *Diversifying Vision Transformers for Out-of-Distribution Generalization*.  
• **Travel Scholarship** at Synapse AI Symposium by Bending Spoons in Milan.
- 2021 • **1st place** at the Computational Geometry & Topology Challenge at ICLR for our study on Topological Noise Invariant Features.
- 2020 • **Best Poster Award** at Eastern European Machine Learning Summer School (EEML) for presenting my Bachelor’s thesis on *Few shot learning by features adaptation with Graph Neural Networks*.
- 2019 • **1st place** at Catalyst Coding Contest (algorithms contest).

## Awards and Achievements (continued)

- 2018 • **1st place** at Textract (ML Hackathon).
- 2017 • **1st place** ITFest (algorithms contest).
- 2016 • Qualified for the **ACM-ICPC** Southeastern European Regional Contest (SEERC).
  - **Best Research Idea** at AI-MAS Summer School at UPB.
- 2013, 2015 • **Bronze Medal** at the Romanian National Olympiad in Informatics.
- 2012 • **Bronze Medal** at the Romanian National Olympiad in Physics.
- 2009 – 2015 • **Finalist** in National Olympiad in Mathematics (2009, 2012), Physics (2010-2012), Informatics (2012-2015).

## Skills

### Programming

PyTorch, TensorFlow ● ● ● ● ●  
Python, C ● ● ● ● ●  
C++, C#, Java ● ● ● ● ○

Matlab, OpenCV ● ● ● ○ ○  
Haskell, Scala ● ● ○ ○ ○

### Spoken languages

English: *fluent*      Romanian: *native*

## References

### Prof. Damien Teney

Idiap Research Institute, Switzerland

✉ [contact@damienteney.info](mailto:contact@damienteney.info)

### Prof. Bogdan Alexe

University of Bucharest, Romania

✉ [bogdan.alexe@fmi.unibuc.ro](mailto:bogdan.alexe@fmi.unibuc.ro)

### Prof. Traian Rebedea

Politehnica University of Bucharest, Romania

✉ [traian.rebedea@cs.pub.ro](mailto:traian.rebedea@cs.pub.ro)