








Armand Nicolicioiu


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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 **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.
- 2 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.
- 3 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).
- 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.

Awards and Achievements (continued)

- 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

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Prof. Bogdan Alexe

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Prof. Traian Rebedea

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