

Andrei Manolache

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EDUCATION

IMPRS-IS & ELLIS; University of Stuttgart

Oct. 2022 - Ongoing

PH.D. IN ARTIFICIAL INTELLIGENCE

Ph.D. student in the IMPRS-IS and ELLIS programs, affiliated with the University of Stuttgart under the supervision of [Mathias Niepert](#) and co-advised by [Karsten Borgwardt](#) at the Max Planck Institute of Biochemistry. Research focuses on Geometric Deep Learning, with emphasis on robustness.

Teacher Assistant: Reinforcement Learning, Foundation Models, Introduction to AI, Recent Applications of Machine Learning

University of Bucharest, Faculty of Mathematics and Computer Science

Oct. 2019 - Jun. 2021

M.SC. IN ARTIFICIAL INTELLIGENCE, VALEDICTORIAN DISTINCTION

Thesis: [Deep Anomaly Detection in Text](#) (ENG), Thesis Grade 10/10

Teacher Assistant: [Deep Learning](#), [Advanced Machine Learning](#), [Operating Systems](#)

University of Bucharest, Faculty of Mathematics and Computer Science

Oct. 2016 - Jun. 2019

B.SC. IN MATHEMATICS AND COMPUTER SCIENCE, FIRST CLASS HONOURS

Thesis: [Autonomous Driving, Ackermann-Steered Vehicle](#) (RO), [Abstract](#) (ENG), Thesis Grade 10/10

PUBLICATIONS AND PATENTS

Total Citations: 402; **h-index:** 10 (as of August 2026).

Protein Fold Classification at Scale: Benchmarking and Pretraining.

Dexiong Chen*, **Andrei Manolache***, Mathias Niepert, Karsten Borgwardt ICML '26 Oral ($\approx$ 2.64% of accepts)

Learning the Neighborhood: Contrast-Free Self-Supervised Molecular Graph Pretraining.

Boshra Ariguib, Mathias Niepert, **Andrei Manolache** ICML '26

How the Optimizer Shapes Learned Solutions in Equivariant Neural Networks.

Teodor Stupariu, **Andrei Manolache** ICML '26 WSS Workshop

Learning (Approximately) Equivariant Networks via Constrained Optimization.

Andrei Manolache, Luiz F.O. Chamon, Mathias Niepert NeurIPS '25 Oral ($\approx$ 1.46% of accepts)

ChronoGraph: A Real-World Graph-Based Multivariate Time Series Dataset.

Adrian C. Lutu*, Ioana Pintilie*, Elena Burceanu, **Andrei Manolache** NeurIPS 2025 BERT²S Workshop Oral

MolMix: A Simple Yet Effective Baseline for Multimodal Molecular Representation Learning.

Andrei Manolache, Dragos Tantar, Mathias Niepert NeurIPS 2024 MLSB Workshop

Probabilistic Graph Rewiring via Virtual Nodes.

Chendi Qian*, **Andrei Manolache***, Christopher Morris, Mathias Niepert NeurIPS 2024

Probabilistically Rewired Message-Passing Neural Networks.

Chendi Qian*, **Andrei Manolache*** et al. ICLR 2024

AD-NLP: A Benchmark for Anomaly Detection in Natural Language Processing.

Matei Bejan*, **Andrei Manolache***, Marius Popescu EMNLP 2023

Time Series Anomaly Detection using Diffusion-based Models.

Ioana Pintilie*, **Andrei Manolache**, Florin Brad ICDM 2023 AI4TS Workshop

Probabilistic Task-Adaptive Graph Rewiring.

Chendi Qian*, **Andrei Manolache*** et al. ICML 2023 Workshop on Differentiate Almost Everything

VeriDark: A Large-Scale Benchmark for Authorship Verification on the Dark Web.

Andrei Manolache*, Florin Brad* et al. NeurIPS 2022

AnoShift: A Distribution Shift Benchmark for Unsupervised Anomaly Detection.
Marius Dragoi*, Elena Burceanu*, Emanuela Haller*, **Andrei Manolache**, Florin Brad

NeurIPS 2022

Rethinking the Authorship Verification Experimental Setups.
Florin Brad*, **Andrei Manolache*** et al.

EMNLP 2022

DATE: Detecting Anomalies in Text via Self-Supervision of Transformers.
Andrei Manolache, Florin Brad, Elena Burceanu

NAACL 2021; ICML 2021 UDL Workshop

Anomaly Detection Systems And Methods.
Andrei Manolache, Florin Brad, Elena Burceanu, Alexandru Novac

US Patent 11,847,111

Systems and Methods of Detecting Chatbots.
Florin Brad, **Andrei Manolache**, Elena Burceanu

US Patent App. 18/320.250

WORK EXPERIENCE

BITDEFENDER | RESEARCH SCIENTIST

Oct 2019 – Present

- I'm currently involved in the European Lighthouse of AI for Sustainability (ELIAS) project.
- Lecturer for Bitdefender's Deep Learning course at the University of Bucharest, teaching final-year B.Sc. students.
- Managed a team of interns on projects including internal chatbots and systems for automatically converting and analyzing support-client phone conversations to assess interaction quality.

NXP SEMICONDUCTORS | ADAS SOFTWARE ENGINEER

May 2019 - Oct 2019

- Developed an automotive neural network inference engine leveraging NXP's hardware accelerator; contributed to core C/C++ engine and explored quantization, pruning, and optimization methods.

NXP SEMICONDUCTORS | OS SOFTWARE ENGINEER INTERN

Feb 2018 - May 2019

- Built a 1/10-scale Ackermann-steered autonomous car using ROS and Linux; implemented planning, SLAM, and computer vision algorithms in Python and C++. Completed as B.Sc. thesis.

PROJECTS, AWARDS AND MISCELLANEA

REVIEWING DUTIES

Misc

I have served as a reviewer for various ML conferences (EMNLP, ICML, ICLR, NeurIPS). I obtained Best Reviewer awards three times for NeurIPS 2022, 2023, and 2024 and a Gold Reviewer award for ICML 2026.

DARWIN

DEEP LEARNING, NLP

Member of Project DARWIN (€246,000, funded by Romania's Ministry of Education), developing forensic methods to identify and profile cyber-criminal activity on the Dark Web.

EEML 2022, 2024 - TEACHING ASSISTANT & KEYNOTE SPEAKER

Misc

I was a Teaching Assistant at the 2022 and 2024 editions of the East European Machine Learning Summer School. I was also an Industry Keynote Speaker for EEML 2024.

EEML 2021, 2025 - BEST POSTER AWARD

DEEP LEARNING

I got the best poster award at the 2021 and 2025 editions of the East European Machine Learning Summer School.

ICLR 2021 COMPUTATIONAL GEOMETRY & TOPOLOGY CHALLENGE

TDA, GEOMETRIC LEARNING

Our submission, Topological noise invariant features using Giotto-TDA and Geomstats, won 1st place at the ICLR 2021 Computational Geometry & Topology Challenge. We developed a pipeline for extracting Perturbed Topological Signatures (PTS) with Geomstats and Giotto-TDA, and analyzed the robustness of these representations.

PYTORCH GLOBAL SUMMER HACKATON 2020

DEEP LEARNING, CV, NLP, VQA

Our hackathon submission, Q&Aid, won 1st place at the PyTorch Global Summer Hackathon 2020. Q&Aid is a conversational agent using machine learning models to filter, label, and answer medical questions. I contributed by researching VQA and vision models and integrating them into the project.

STUDENTS SCIENTIFIC COMMUNICATIONS SESSION 2019 & 2021

I was awarded the 1st place at the Faculty of Mathematics and Computer Sciences' Students Scientific Communications Session twice: for my Bachelor's thesis in 2019, and for my Master's thesis in 2021.