Roxana Pop

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Ranapop

Education

University of Oslo, ***Department of Informatics*** **Oslo**
PhD Fellow *2021–present*

- I am a 3rd year PhD student, researching in the area of Neurosymbolic AI under the supervision of Egor V. Kostylev. I am interested in multiple machine learning tasks on Temporal Knowledge Graphs (a temporal extension of Knowledge Graphs), mostly in forecasting settings. I am currently designing deep learning solutions, but I have also started investigating connections with temporal logic. My main PhD objective is to construct a Neurosymbolic framework in which rules in a temporal logic are automatically extracted from a trained neural network operating on Temporal Knowledge Graphs.

Technical University of Cluj-Napoca, ***Computer Science Department*** **Cluj-Napoca**
Master in Artificial Intelligence and Computer Vision *2018–2020*

Technical University of Cluj-Napoca, ***Computer Science Department*** **Cluj-Napoca**
Bachelor in Computer Science *2014–2018*

Teaching

University of Oslo **Oslo**
Teacher *January 2022–present*

- responsibilities: prepare materials, projects, hold group sessions, hold one lecture (on interpretability)
- subjects: IN-STK5000 – Adaptive methods for data-based decision making, IN5550 – Neural Methods in Natural Language Processing

Technical University of Cluj-Napoca **Cluj-Napoca**
Teaching Assistant *October 2018–July 2021*

- held group sessions for: Fundamental Algorithms, Computer Programming, Logic Programming

Industry Experience

Google **Amsterdam (virtual)**
Software Engineering Intern *August 2020–November 2020*
Worked on semantic parsing on CFQ (Compositional Freebase Questions) in Flax

- implemented two LSTM-based parsing systems on CFQ (NL → SPARQL), a vanilla sequence-to-sequence architecture and an architecture with a syntax-constrained decoder

Catalysts (Cloudflight) **Cluj-Napoca**
Software Developer *October 2018–June 2020*
Worked on a system for dealership front office & back office management

- improved organizational & communication skills due to working in a large project (6+ teams) and within a distributed team (Linz - Cluj-Napoca)

Airport Labs **Cluj-Napoca**
Data Scientist Intern *July 2018–August 2018*
Developed a performance comparison framework for multiple object detection in Python

Non-profit

UiODoc (the interest organization for PhD and Postdoctoral Fellows at UiO) **Oslo**
UiODoc board member *2021–present*

- President (June 2023 - present); Secretary (October 2021 - May 2023, elected for 2 terms)

Research stays

- The Alan Turing Institute, PhD Enrichment Scheme: January-July 2023
- The University of Oxford – Data, Knowledge, and Action group, planned research stay: May-August 2024

Reviewer experience

- Reviewed several papers for the Temporal Graph Learning Workshop @ NeurIPS 2023

Communicating my research

Pitches:

- Competed in PitchFest at AI UK 2023 which entailed presenting my research to a general audience in a 90s pitch

Posters:

- Presented an accepted (non-archival) paper at the Temporal Graph Learning Workshop at NeurIPS 2023, presented an accepted paper as a poster at NeSy 2023
- Presented posters at: NordicAI Meet 2023, the 2nd Annual Symposium of The Turing Interest Group on Knowledge Graphs, NORA's Research School Annual Conference 2022

Presentations:

- Gave several presentations on my research
  - internally at the University of Oslo (dScience lunch seminar)
  - at two networking events for PhD students organized by the Alan Turing Institute
  - at a Knowledge Representation and Reasoning seminar at the University of Oxford

Events Organizing

- Data Science Day 2022 and 2023 (400+ participants each): member of the organizing committee
- NordicAI Meet 2023 (Copenhagen, Denmark): member of the PhD organizing committee – responsible for organizing the social event (50 participants)
- AI UK 2023 (London, UK, 3000+ participants): volunteer
- Data Hazards, Ethics and Reproducibility One-Day Symposium at the Alan Turing Institute (London, UK, 20 participants): volunteer
- Various UiODoc events in the period 2021-2023 (20 to 100 participants): assisted in organizing and/or executing the events

Publications

[1] R. Pop and E. V. Kostylev, "Inductive future time prediction on temporal knowledge graphs with interval time," in *Proceedings of the 17th International Workshop on Neural-Symbolic Learning and Reasoning*, vol. 3432, CEUR-WS.org, 2023, pp. 233–240.

[2] O. B. Batiz, R. P. Helmer, R. Pop, F. C. Macicasan, and C. Lemnaru, "Concept identification with sequence-to-sequence models in abstract meaning representation parsing," in *16th IEEE International Conference on Intelligent Computer Communication and Processing, ICCP 2020*, IEEE, 2020, pp. 83–90.

[3] R. Pop, F. C. Macicasan, and C. Lemnaru, "A two stage approach for AMR parsing using the concept inference order," in *16th IEEE International Conference on Intelligent Computer Communication and Processing, ICCP 2020*, IEEE, 2020, pp. 91–98.

[4] V. Ieremias, R. Pop, and F. C. Macicasan, "Identifying concepts and relations in a transition-based AMR parser," in *15th IEEE International Conference on Intelligent Computer Communication and Processing, ICCP 2019*, IEEE, 2019, pp. 135–142.

[5] R. Pop, A. Dregan, F. C. Macicasan, C. Lemnaru, and R. Potolea, "Enhancements on a transition-based approach for AMR parsing using LSTM networks," in *14th IEEE International Conference on Intelligent Computer Communication and Processing, ICCP 2018*, IEEE, 2018, pp. 55–62.