The Second Workshop on Pattern-based Approaches to NLP in the Age of Deep Learning (Pan-DL)

Proceedings of the Workshop

December 6, 2023
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Welcome to the second edition of the Workshop on Pattern-based Approaches to NLP in the Age of Deep Learning (Pan-DL)! Our workshop is being organized in a hybrid format on December 6, 2023, in conjunction with the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP).

In the past year, the natural language processing (NLP) field (and the world at large!) has been hit by the large language model (LLM) “tsunami.” This happened for the right reasons: LLMs perform extremely well in a multitude of NLP tasks, often with minimal training and, perhaps for the first time, have made NLP technology extremely approachable to non-expert users. However, LLMs are not perfect: they are not really explainable, they are not pliable, i.e., they cannot be easily modified to correct any errors observed, and they are not efficient due to the overhead of decoding. In contrast, rule-based methods are more transparent to subject matter experts; they are amenable to having a human in the loop through intervention, manipulation and incorporation of domain knowledge; and further the resulting systems tend to be lightweight and fast. This workshop focuses on all aspects of rule-based approaches, including their application, representation, and interpretability, as well as their strengths and weaknesses relative to state-of-the-art machine learning approaches.

Considering the large number of potential directions in this neuro-symbolic space, we emphasized inclusivity in our workshop. We received 19 submissions and accepted 10 for oral presentation. This resulted in an overall acceptance rate of 52%. Our workshop also includes 6 presentations of papers that were accepted in Findings of EMNLP.

In addition to the oral presentations of the accepted papers, our workshop includes a keynote talk by Yunyao Li, who has made many important contributions to the field of symbolic approaches for natural language processing. Further, the workshop contains a panel that will discuss the merits and limitations of rules in the new LLM era. The panelists will be academics with expertise in both neural- and rule-based methods, industry experts that employ these methods for commercial products, and subject matter experts that have used rule-based methods for domain-specific applications.

We thank Yunyao Li and the panelists for their important contribution to our workshop!

Finally, we are thankful to the members of the program committee for their insightful reviews! We are confident that all submissions have benefited from their expert feedback. Their contribution was a key factor for accepting a diverse and high-quality list of papers, which we hope will make the first edition of the Pan-DL workshop a success, and will motivate many future editions.

Pan-DL 2023 Organizers
December 6, 2023
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Wednesday, December 6, 2023

9:00–9:15  Introduction

9:15–10:30  Panel

10:30–10:45  Coffee Break

10:45–12:00  Keynote
Yunyao Li, Director of Machine Learning, Adobe Experience Platform

12:00–13:00  Lunch

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13:00–13:15  Nearest Neighbor Search over Vectorized Lexico-Syntactic Patterns for Relation Extraction from Financial Documents
Pawan Rajpoot and Ankur Parikh

Stanley Lim, Da Yin and Nanyun Peng

13:30–13:45  A Graph-Guided Reasoning Approach for Open-ended Commonsense Question Answering
Zhen Han, Yue Feng and Mingming Sun

13:45–14:00  Generating Irish Text with a Flexible Plug-and-Play Architecture
Simon Mille, Elaine Uí Dhonnchadha, Lauren Cassidy, Brian Davis, Stamatia Dasiopoulou and Anya Belz

14:00–14:15  Findings Talk - A Lightweight Method to Generate Unanswerable Questions in English
Vagrant Gautam

14:15–14:25  Short Break
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14:25–15:30 Session 2

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Justin Chiu, Wenting Zhao, Derek Chen, Saujas Vaduguru, Alexander Rush and Daniel Fried

14:40–14:55 Towards Zero-Shot Frame Semantic Parsing with Task Agnostic Ontologies and Simple Labels
Danilo Neves Ribeiro, Jack Goetz, Omid Abdar, Mike Ross, Annie Dong, Kenneth Forbus and Ahmed Mohamed

14:55–15:10 Co-evolving data-driven and NLU-driven Synthesizers for Generating Code in Domain Growth and Data Scarcity
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Aman Maadan

15:30–15:45 Coffee Break

15:45–17:00 Session Three

15:45–16:00 Complementary Roles of Inference and Language Models in QA
Liang Cheng, Mohammad Javad Hosseini and Mark Steedman

16:00–16:15 Controlled Data Augmentation for Training Task-Oriented Dialog Systems with Low Resource Data
Sebastian Steindl, Ulrich Schäfer and Bernd Ludwig

16:15–16:30 A Hybrid of Rule-based and Transformer-based Approaches for Relation Extraction in Biodiversity Literature
Roselyn Gabud, Portia Lapitan, Vladimir Mariano, Eduardo Mendoza, Nelson Pampolina, Maria Art Antonette Clariño and Riza Batista-Navarro

16:30–16:45 Findings Talk - Solving the Right Problem is Key for Translational NLP
Bernal Jimenez Gutierrez

16:45–17:00 Findings Talk - TR-Rules: Rule-based Model for Link Forecasting on Temporal Knowledge Graph Considering Temporal Redundancy
Ningyuan Li

17:00–17:10 Short Break

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Sadia Afrin

17:25–17:40  Findings Talk - Evaluating Emotion Arcs Across Languages: Bridging the Global Divide in Emotion Research
Daniela Teodorescu

17:40–17:45  Best Paper Award

17:45–18:00  Closing