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**Proceedings of Pattern-based Approaches to NLP in the Age  
of Deep Learning  
(PAN-DL)**

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## Message from the Organizers

Welcome to the first edition of the Workshop on Pattern-based Approaches to NLP in the Age of Deep Learning (Pan-DL)! Our workshop is being organized online on October 17, 2022, in conjunction with the 29th International Conference on Computational Linguistics (COLING).

We all know that deep-learning methods have dominated the field of natural language processing in the past decade. However, these approaches usually rely on the availability of high-quality and high-quantity data annotation. Furthermore, the learned models are difficult to interpret and incur substantial technical debt. As a result, these approaches tend to exclude users that lack the necessary machine learning background. In contrast, rule-based methods are easier to deploy and adapt; they support human examination of intermediate representations and reasoning steps; they 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 13 papers and accepted 10 for oral presentation. This resulted in an overall acceptance rate of 77%.

In addition of the oral presentations of the accepted papers, our workshop includes a keynote talk by Ellen Riloff, who has made crucial contributions to the field of natural language processing, many of which are at the intersection of rule- and neural-based methods. Further, the workshop contains a panel that will discuss the merits and limitations of rules in our neural era. The panelists will be academics with expertise in both neural- and rule-based methods, industry experts that employ these methods for commercial products, government officials in charge of AI funding, organizers of natural language processing evaluations, and subject matter experts that have used rule-based methods for domain-specific applications.

We thank Ellen Riloff 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 2022 Organizers  
October 2022

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