

# Towards Deep and Interpretable Rule Learning<sup>\*</sup>

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## Abstract

Inductive rule learning is concerned with the learning of classification rules from data. Learned rules are inherently interpretable and easy to implement, so they are very suitable for formulating learned models in many domains. Nevertheless, current rule learning algorithms have several shortcomings. First, with respect to the current praxis of equating high interpretability with low complexity, we argue that while shorter rules are important for discrimination, longer rules are often more interpretable than shorter rules, and that the tendency of current rule learning algorithms to strive for short and concise rules should be replaced with alternative methods that allow for longer concept descriptions. Second, we think that the main impediment of current rule learning algorithms is that they are not able to learn deeply structured rule sets, unlike the successful deep learning techniques. Both points are currently under investigation in our group, and we will show some preliminary results.

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