



# HIERARCHICAL MULTILABEL CLASSIFICATION WITH A REJECT OPTION

## SUPERVISORS

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## BACKGROUND

All

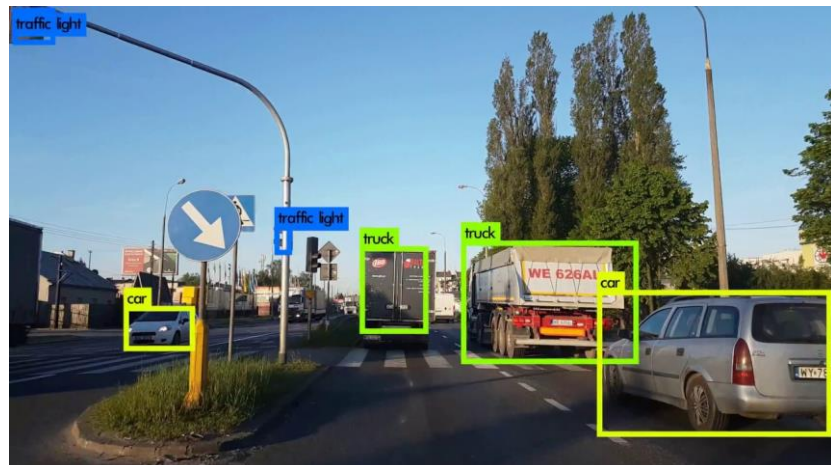
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## Background

In the realm of classification problems, one often benefits from solutions where, instead of single false predictions, multiple predictions (i.e. reject option) are preferred. This frequently occurs in medical diagnosis, where in the face of uncertainty, multiple decisions are considered instead of single decisions. Recent research has shown interesting results, when it comes to multiclass classification, especially when a hierarchy among classes is exploited. The question in this thesis would be if the latter findings are also applicable for the more general multilabel classification problems.



## Scope of the thesis

After necessary literature review and familiarizing with topics such as neural networks, loss optimization, the student will design, implement and conduct experiments, in order to answer the abovementioned fundamental research question. For this, the student will make use of relevant biological hierarchical multilabel datasets. No prior experience with machine learning is needed, but an interest for computational modelling is appreciated. For this thesis it is advised to follow the “Predictive Modelling” course in the first semester.

