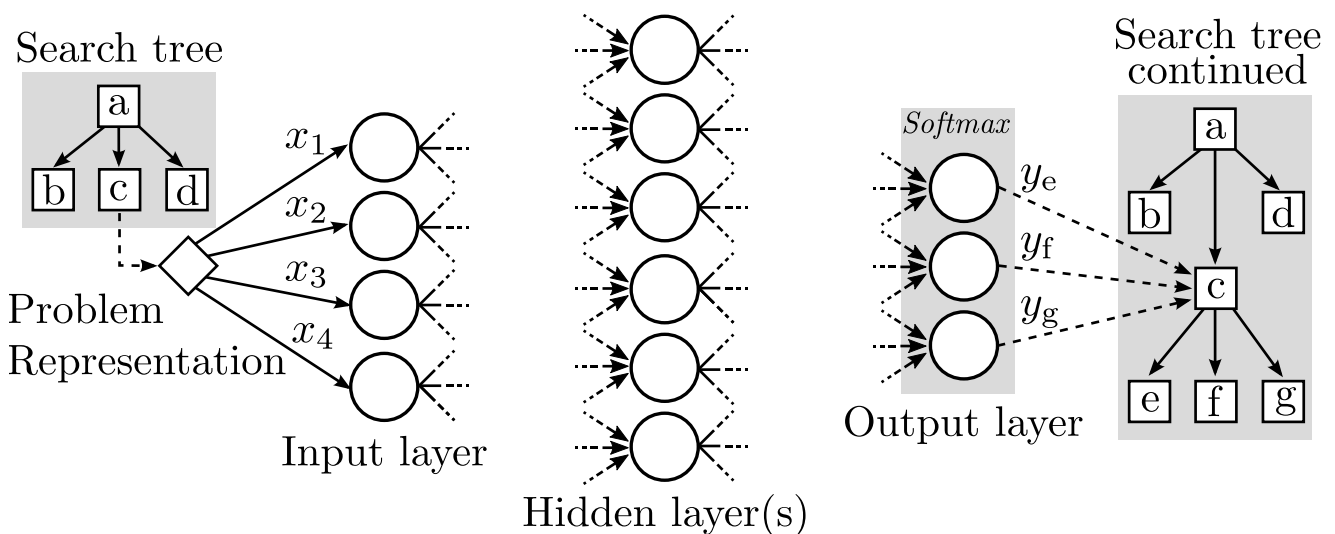


# Masters Thesis Topic

## Deep Learning Tree Search



### Topic overview:

What if algorithms could learn how to solve decision problems on their own? With such capabilities, human algorithm designers would be freed from thinking up domain-specific heuristics and could focus more on "big picture" questions or general algorithms.

Deep Learning Tree Search (DLTS) uses a deep neural network to guide a tree search algorithm for solving decision and optimization problems. An initial version of it was tested on a problem from the container terminals literature and shown to find near-optimal solutions in little time.

An initial design of DLTS has been created, but many questions still remain. Which problems can DLTS be applied to? Does DLTS need to be extended to support certain classes of optimization problems? What kind of tuning does the neural network require to work effectively? Can we use reinforcement learning to avoid a supervised learning phase?

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**Note: This masters thesis topic may be written in German or English!**