



Self-Constructing Neural Network

(Deep) Neural Networks have become state of the art in many areas such as image recognition and machine translation. However, when it comes to designing the right architectures, practitioners heavily rely on experience, best-practices and heuristics.

Do you choose a large network that is slow to train and might overfit, or do you choose a smaller one that might underfit? K-folding like in classical Machine Learning is often not feasible for Deep Learning due to prohibitive training times. Therefore, choosing the “right” architecture from the get-go, or at least much faster, would be very convenient and speed up experiments.



The goal of this thesis is to get a better understanding of architecture design and hyperparameter-tuning by implementing self-constructing Neural Networks that for example dynamically change their size during training and therefore, in a sense, design themselves. If you are interested in this topic, do not hesitate to contact us so that we can exchange ideas.

Requirements: Interest in and willingness to study Machine Learning and Deep Learning. There will be weekly meetings to discuss progress and open questions.

Interested? Please contact us for more details!

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