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QUESTION OF GENERALIZATION IN ANN

To generalize for n tasks, will not a neural network be trained with an average target function over the n tasks?

ANALYSIS

Let tasks or target functions be $y_1 \cdots y_n$.

Mean average target function = $\frac{1}{n}\sum_{i=0}^{n} y_i = \overline{y}$.

Training over n task with average target function can be problematic if there is high variation or large Euclidean distance between $y_1 \cdots y_n$. A large Euclidean distance may weaken generalization. Hence, to measure generalization strength/capacity of a well-trained neural network model, the following formula may be used.

Measure, $m = E(v(y_1 \cdots y_n))$,

$E =$ Euclidean distance, and $v =$ variance.