

GPL, MLP

Are symbolic regressor:

Takes in $(\mathbb{R}^{(n+1)} \rightarrow \text{string})$

Eg it takes in $\{(1, 2), (2, 3), (3, 4)\} \rightarrow "x + 1"$

To get a baseline for MLP:

Give three things (and withhold one thing)

X, Y, and TX (withhold TY)

MLP will take X and Y and return eqn.

We take the eqn and TX and we get PY

Then we can compare PY with TY for the error score.

Focus on 1 variable

30 points?

Try to get it to work

On $[0, 3]$

$y=x$

$y=3-x$

Hyperparameter	Simple	Complicated
# variables	1	2+
Datapoints spacing	Mesh	random
# datapoints	Many [30]	few
Set of operators	Few [+ , x, sqrt, sin]	many
Equation complexity	Simple (few levels) 2	Complex (many levels)
Interval	Smaller [0, 3]	Bigger
Input to model	(x,y)	(x, y)
# decimals	2	4+
# number of training equations	Many (5 million?)	Many many more
Constant values: how many	Not too many (50%)	Many (80%)
Constant values: range	Small [-1, 1]	Large (-5, 5)
Use pointnet?	Yeah - deep!!	
Sort datapoints?	irrelevant	
Output constants in eqn?	No, learn structure only	

x:

(2.8, 2.8)->f10

(0.1, 0.1)->f1

(0.2, 0.2)->f2

...

(2.9, 2.9)->f11 ---> f2

3-x:

(0.1, 2.9)->g1

(0.2, 2.8)->g2

(2.8, 0.2) ->g10

(2.9, 0.1)->g11