

# Automatic generated report CNET0029.

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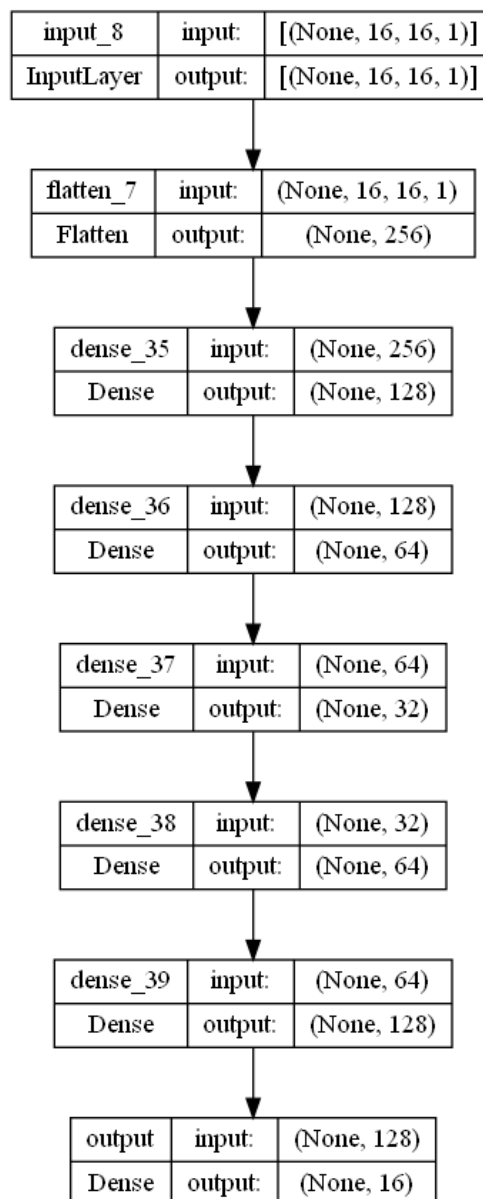


Fig. 1: Model visualization

## 1 Model

The model has been compiled successfully with the following parameters:

Layer	Shape	Attributes
Flatten	(None,)	
Dense	(128,)	
Dense	(64,)	
Dense	(32,)	
Dense	(64,)	
Dense	(128,)	

Tab. 1: Model architecture and attributes.

Model summary		
Model: "model_0"		
Layer type	Output Shape	Param #
input_1 InputLayer	[None, 8, 8, 1]	0
flatten Flatten	None, 64	0
dense Dense	None, 128	8320
dense_1 Dense	None, 64	8256
dense_2 Dense	None, 32	2080
dense_3 Dense	None, 64	2112
dense_4 Dense	None, 128	8320
output Dense	None, 8	1032
Total params: 30,120		
Trainable params: 30,120		
Non-trainable params: 0		
Model: "model_1"		
Layer type	Output Shape	Param #
input_2 InputLayer	[None, 8, 8, 1]	0
flatten_1 Flatten	None, 64	0
dense_5 Dense	None, 128	8320
dense_6 Dense	None, 64	8256

dense_7 Dense	None, 32	2080
dense_8 Dense	None, 64	2112
dense_9 Dense	None, 128	8320
output Dense	None, 8	1032

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Total params: 30,120
Trainable params: 30,120
Non-trainable params: 0

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Model: "model_2"

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Layer type	Output Shape	Param #
input_3 InputLayer	[None, 8, 8, 1]	0
flatten_2 Flatten	None, 64	0
dense_10 Dense	None, 128	8320
dense_11 Dense	None, 64	8256
dense_12 Dense	None, 32	2080
dense_13 Dense	None, 64	2112
dense_14 Dense	None, 128	8320
output Dense	None, 8	1032

```

=====
Total params: 30,120
Trainable params: 30,120
Non-trainable params: 0

```

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Model: "model_3"

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Layer type	Output Shape	Param #
input_4 InputLayer	[None, 8, 8, 1]	0
flatten_3 Flatten	None, 64	0
dense_15 Dense	None, 128	8320
dense_16 Dense	None, 64	8256
dense_17 Dense	None, 32	2080
dense_18 Dense	None, 64	2112
dense_19 Dense	None, 128	8320
output Dense	None, 8	1032

```

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Total params: 30,120
Trainable params: 30,120

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Non-trainable params: 0

Model: "model\_4"

Layer type	Output Shape	Param #
input_5 InputLayer	[None, 8, 8, 1]	0
flatten_4 Flatten	None, 64	0
dense_20 Dense	None, 128	8320
dense_21 Dense	None, 64	8256
dense_22 Dense	None, 32	2080
dense_23 Dense	None, 64	2112
dense_24 Dense	None, 128	8320
output Dense	None, 8	1032

Total params: 30,120

Trainable params: 30,120

Non-trainable params: 0

Model: "model\_5"

Layer type	Output Shape	Param #
input_6 InputLayer	[None, 8, 8, 1]	0
flatten_5 Flatten	None, 64	0
dense_25 Dense	None, 128	8320
dense_26 Dense	None, 64	8256
dense_27 Dense	None, 32	2080
dense_28 Dense	None, 64	2112
dense_29 Dense	None, 128	8320
output Dense	None, 8	1032

Total params: 30,120

Trainable params: 30,120

Non-trainable params: 0

Model: "model\_6"

Layer type	Output Shape	Param #
input_7 InputLayer	[None, 8, 8, 1]	0
flatten_6 Flatten	None, 64	0
dense_30 Dense	None, 128	8320

dense_31 Dense	None, 64	8256
dense_32 Dense	None, 32	2080
dense_33 Dense	None, 64	2112
dense_34 Dense	None, 128	8320
output Dense	None, 8	1032

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=====
Total params: 30,120
Trainable params: 30,120
Non-trainable params: 0
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Model: "model_0"
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Layer type           Output Shape          Param #
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input_8 InputLayer   [None, 16, 16, 1]     0
flatten_7 Flatten    None, 256              0
dense_35 Dense       None, 128             32896
dense_36 Dense       None, 64              8256
dense_37 Dense       None, 32              2080
dense_38 Dense       None, 64              2112
dense_39 Dense       None, 128             8320
output Dense         None, 16              2064
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Total params: 55,728
Trainable params: 55,728
Non-trainable params: 0
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## 1.1 Compiler

- *Problem specifications.* The input shape mesh is  $(16, 16, 1)$ , while the output shape is  $(16)$ .
- *Compiling options.* The model makes use of the *mean squared error* loss function and the *adam* optimizer. The metrics taken into account are accuracy and loss.
- *Devices.* The model was trained with 1GPUs.

## 2 Database

The database **32k 16t 0w** was generated with *hypertrain*. The training - validation - test distribution is *'train': 70, 'validation': 20, 'test': 10* and the total size of the database is  $(22938, 6554, 3276)$ .

### 3 Performance

The obtained learning curve is shown below. With **maxloss**: 0.0169, and **minloss**: 0.0.

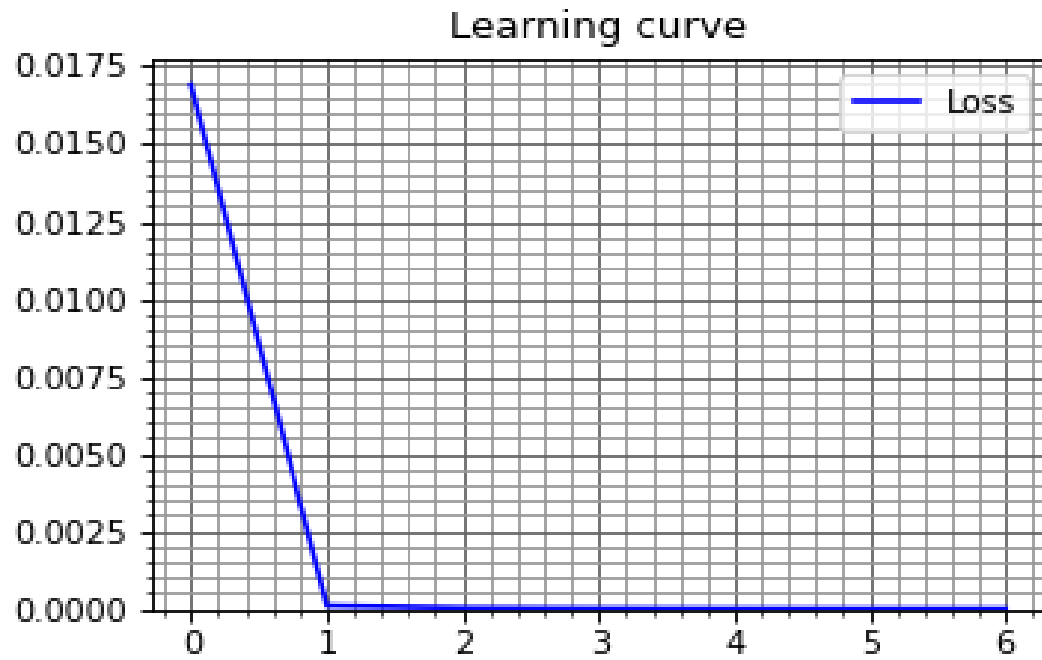


Fig. 2: Learning curve with the introduced database.