Automatic generated report CNET0028.

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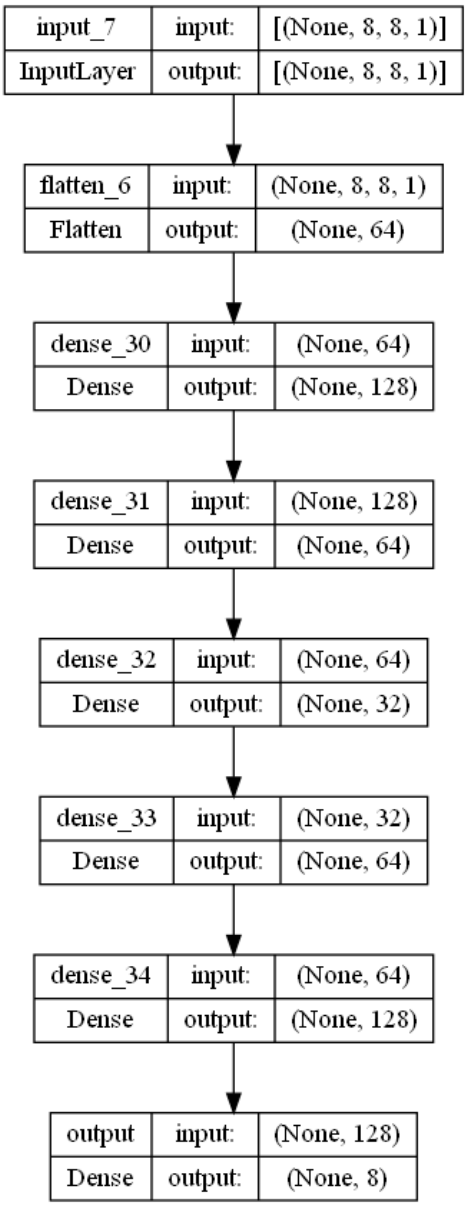

Fig. 1: Model visualization

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

=================================================================
Total params: 30,120
Trainable params: 30,120
Non-trainable params: 0
_________________________________________________________________
Model: "model_2"
_________________________________________________________________
 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
_________________________________________________________________
Model: "model_3"
_________________________________________________________________
 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

=================================================================
Total params: 30,120
Trainable params: 30,120
```

```
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

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

1.1 Compiler

- *Problem specifications.* The input shape mesh is *(8, 8, 1)*, while the output shape is *(8)*.
- *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 8t 06w** 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**: 0.0916, and **minloss**: 0.0836.

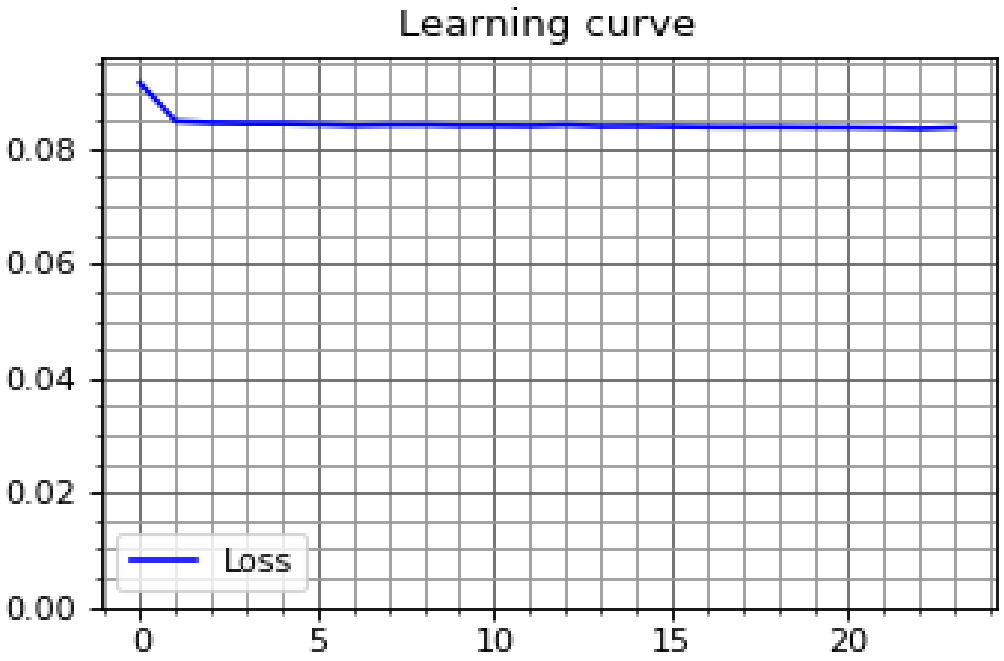

Fig. 2: Learning curve with the introduced database.