

MACHINE LEARNING COURSE

**WEATHER FORECAST
PREDICTION USING NEURAL
NETWORKS**

DATASET OVERVIEW

- Mean temperature
- Mean dewpoint
- Mean pressure
- Max humidity
- Min humidity
- Max dewpoint
- Min dewpoint
- Max pressure
- Min pressure
- Precipitation

1: Project main.py × data.csv × weather-forecast.csv ×

Open file in text editor Adjust column widths on open: Header row fixed: Text-lines per row: 3 ↻ ↺

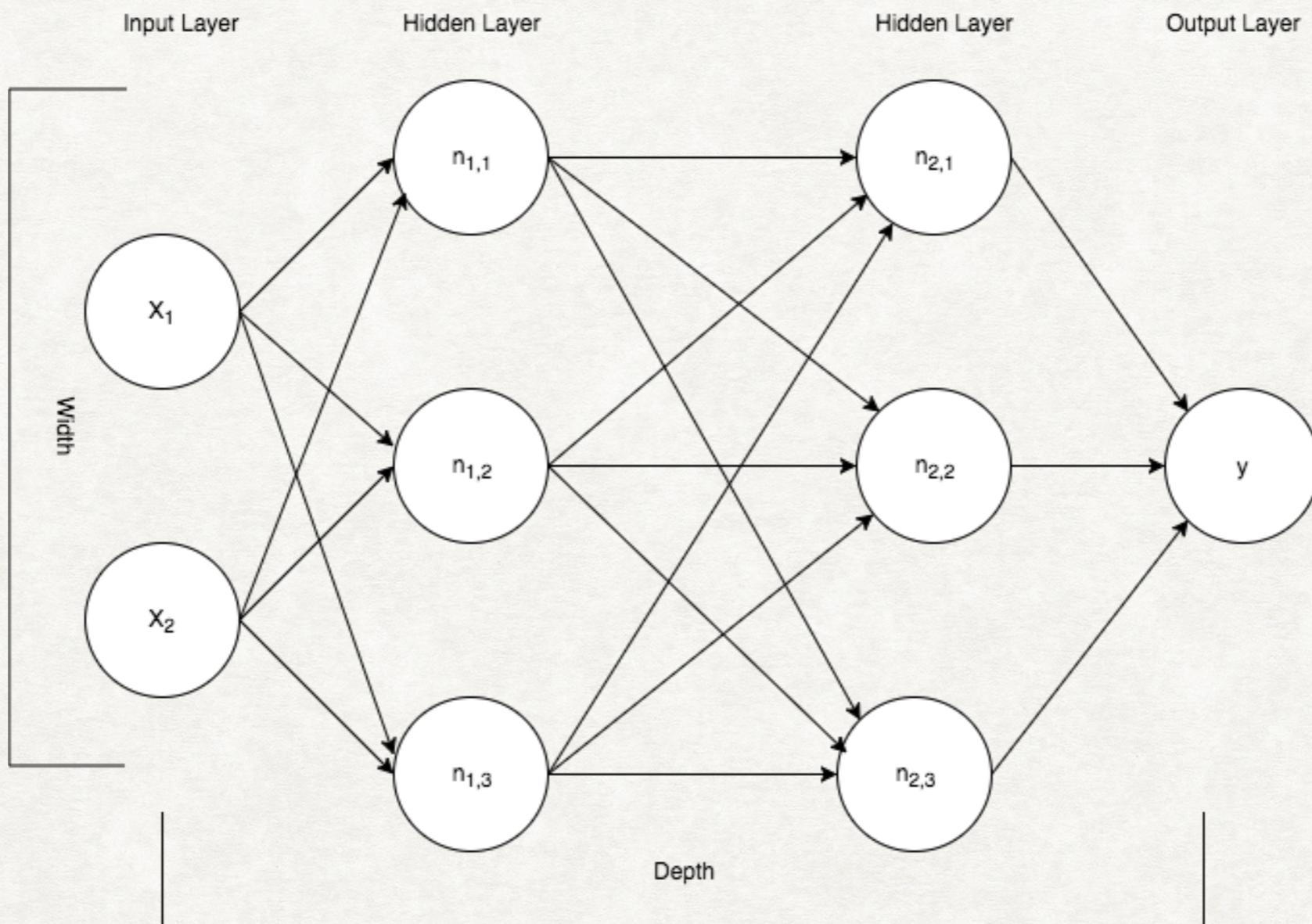
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	date	meantempm	maxtempm	mintempm	meantempm_1	meantempm_2	meantempm_3	meandewptm_1	meandewptm_2	meandewptm_3	meanpressurem_1	meanpressurem_2	meanpressurem_3	maxhumidity_
2	2015-01-04	-14	-12	-18	-4.0	-6.0	-6.0	-11.0	-9.0	-12.0	1016.0	1022.0	1023.0	92.0
3	2015-01-05	-9	-3	-14	-14.0	-4.0	-6.0	-19.0	-11.0	-9.0	1033.0	1016.0	1022.0	80.0
4	2015-01-06	-10	-6	-14	-9.0	-14.0	-4.0	-14.0	-19.0	-11.0	1032.0	1033.0	1016.0	80.0
5	2015-01-07	-16	-12	-19	-10.0	-9.0	-14.0	-15.0	-14.0	-19.0	1036.0	1032.0	1033.0	80.0
6	2015-01-08	-7	2	-16	-16.0	-10.0	-9.0	-22.0	-15.0	-14.0	1035.0	1036.0	1032.0	72.0
7	2015-01-09	-11	-7	-16	-7.0	-16.0	-10.0	-12.0	-22.0	-15.0	1024.0	1035.0	1036.0	69.0
8	2015-01-10	-6	6	-17	-11.0	-7.0	-16.0	-19.0	-12.0	-22.0	1035.0	1024.0	1035.0	69.0
9	2015-01-11	-5	3	-13	-6.0	-11.0	-7.0	-12.0	-19.0	-12.0	1023.0	1035.0	1024.0	79.0
10	2015-01-12	-13	-7	-19	-5.0	-6.0	-11.0	-11.0	-12.0	-19.0	1024.0	1023.0	1035.0	96.0
11	2015-01-13	-12	-4	-20	-13.0	-5.0	-6.0	-17.0	-11.0	-12.0	1040.0	1024.0	1023.0	87.0

Editing via Table Editor might change the format of the CSV file. Follow the link for more infos, addressing issues and providing suggestions: [CSV plugin >>](#)

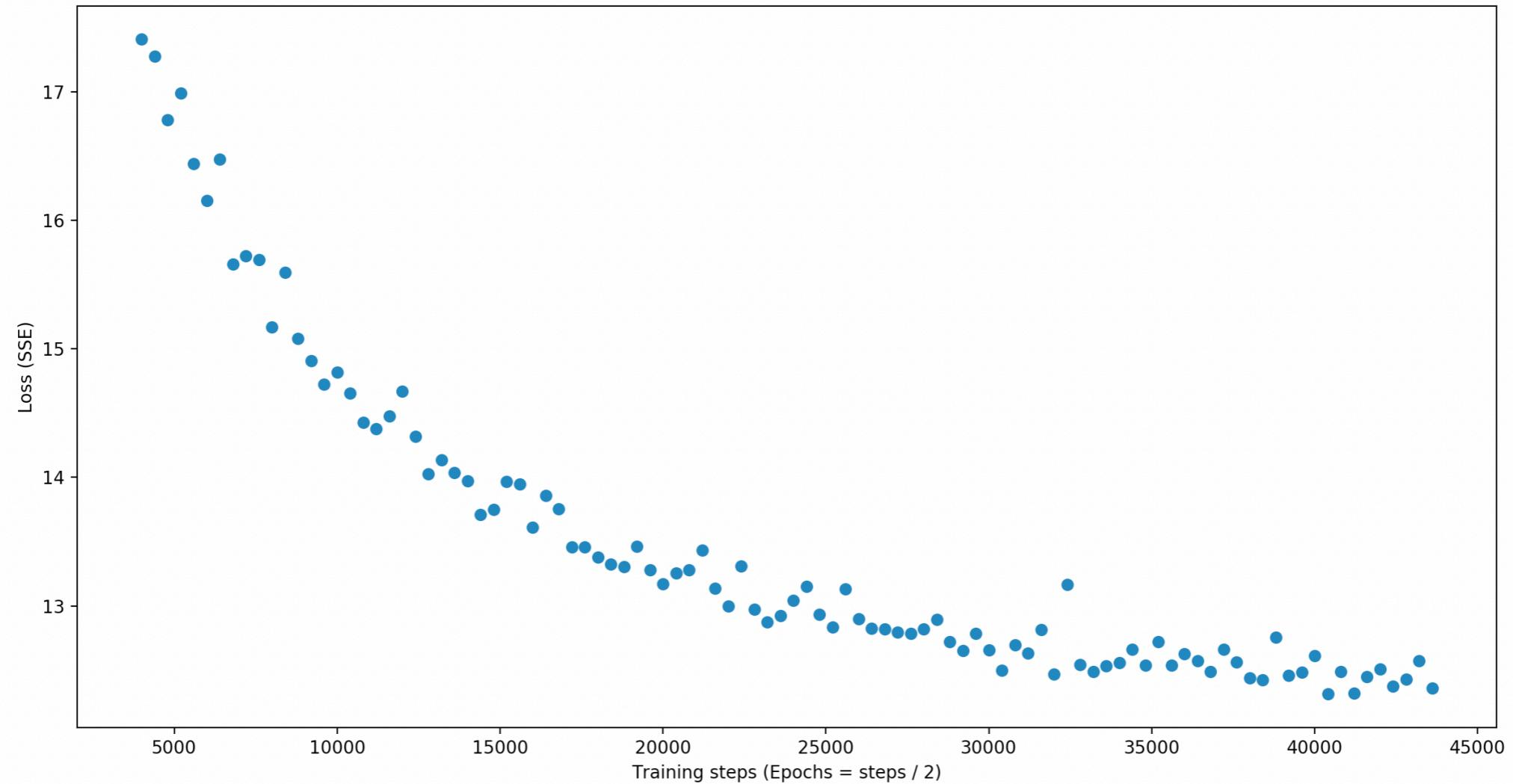
2: Favorites Text Table Editor

6: TODO 9: Version Control Terminal Python Console Event Log
date Git: master

Dataset overview



The neural network figure



x=31216.1 y=16.8746

The loss-training graph

The screenshot shows the PyCharm IDE interface with a dark theme. The left sidebar displays the project structure for 'weather-prediction-nn' containing files 'tf_wx_model', 'data.csv', 'main.py', and 'weather-forecast.csv'. The 'External Libraries' and 'Scratches and Consoles' sections are also visible. The main editor window shows the 'main.py' file with code for training a TensorFlow model and evaluating it. A yellow dot marks the current line of execution. The bottom panel shows the 'Run' tab with the output of the script, which includes TensorFlow warnings about casting from float64 to float32, and the final evaluation results: Explained Variance: 0.87, Mean Absolute Error: 3.17 degrees Celcius, and Median Absolute Error: 2.50 degrees Celcius. The status bar at the bottom provides details like character count (182), line breaks (4), and file statistics.

```
44     return tf.compat.v1.estimator.inputs.pandas_input_fn(x=X,
45                                         y=y,
46                                         num_epochs=num_epochs,
47                                         shuffle=shuffle,
48                                         batch_size=batch_size)
49
50
51 evaluations = []
52 STEPS = 400
53 for i in range(100):
54     regressor.train(input_fn=WX_INPUT_FN(X_train, y=y_train), steps=STEPS)
55     evaluations.append(regressor.evaluate(input_fn=WX_INPUT_FN(X_val,
56                                         y_val,
57                                         num_epochs=1,
58                                         shuffle=False)))
59
60 # print(evaluations[0])
61
62 # manually set the parameters of the figure to an appropriate size
63 plt.rcParams['figure.figsize'] = [14, 10]
64
65 for i in range(100)
```

Run: main

```
2020-01-14 03:03:20.937 Python[14110:563194] ApplePersistenceIgnoreState: Existing state will not be touched. New state will be written to (null)
WARNING:tensorflow:Layer dnn is casting an input tensor from dtype float64 to the layer's dtype of float32, which is new behavior in TensorFlow 2. The layer has dtype float32 because it's dtype
If you intended to run this layer in float32, you can safely ignore this warning. If in doubt, this warning is likely only an issue if you are porting a TensorFlow 1.X model to TensorFlow 2.
To change all layers to have dtype float64 by default, call `tf.keras.backend.set_floatx('float64')`. To change just this layer, pass dtype='float64' to the layer constructor. If you are the au
The Explained Variance: 0.87
The Mean Absolute Error: 3.17 degrees Celcius
The Median Absolute Error: 2.50 degrees Celcius

Process finished with exit code 0
```

4: Run 5: Debug 6: TODO 9: Version Control Terminal Python Console 1 Event Log

182 chars, 4 line breaks 56:70 LF UTF-8 4 spaces Git: master Python 3.7

Output: Evaluation of the model

GRAZIE MILLE!
DİL A ASLAN
MUSTAFA YUMURTACI