

paper07_model_comparison

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1 Model Comparison

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We trained our models using Vertex AI in order to have enough computational resources to load as much history as possible within our budget.

2 Comparison of Trained Models using Different Time Windows

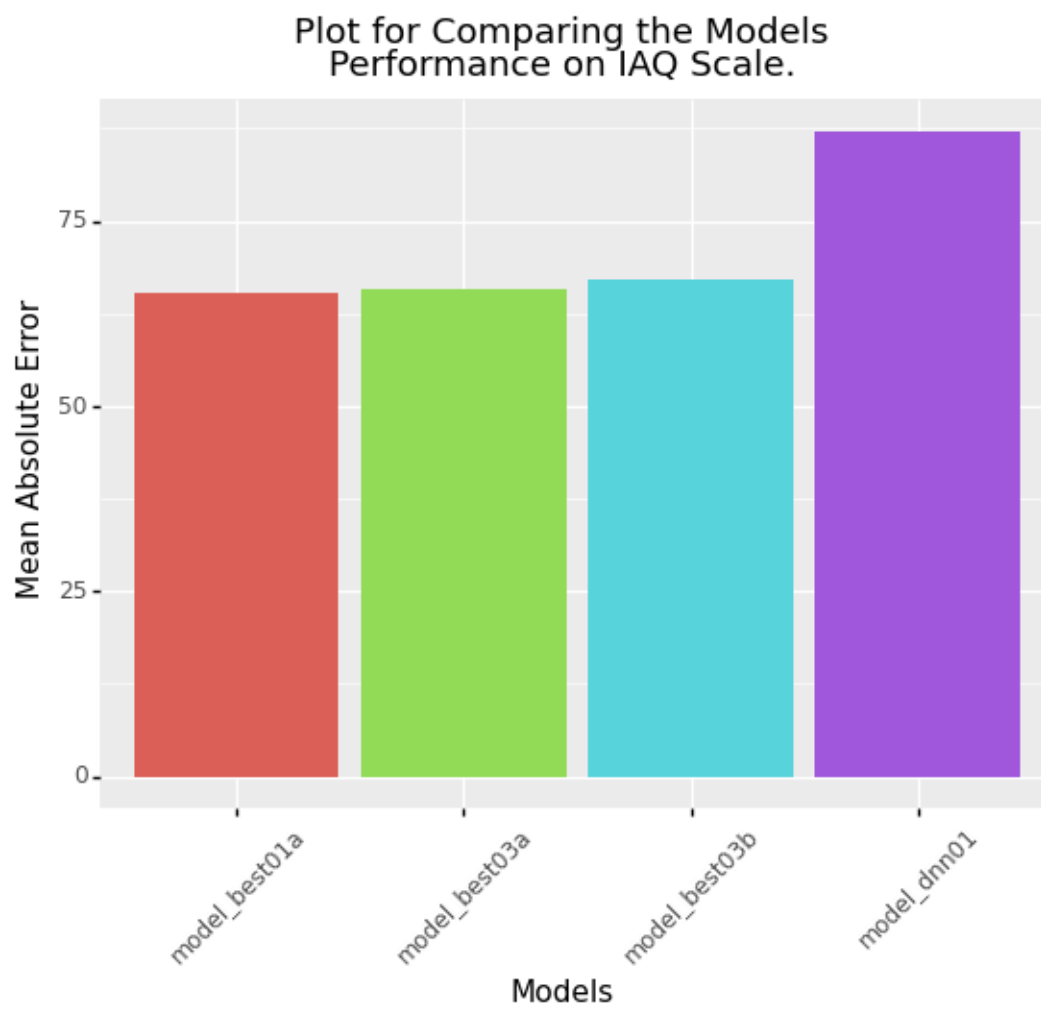
2.1 1 Week History

MinMaxScaler()

```
/opt/intel/oneapi/intelpython/latest/lib/python3.7/site-  
packages/sklearn/base.py:334: UserWarning: Trying to unpickle estimator  
MinMaxScaler from version 0.22.2.post1 when using version 0.23.2. This might  
lead to breaking code or invalid results. Use at your own risk.
```

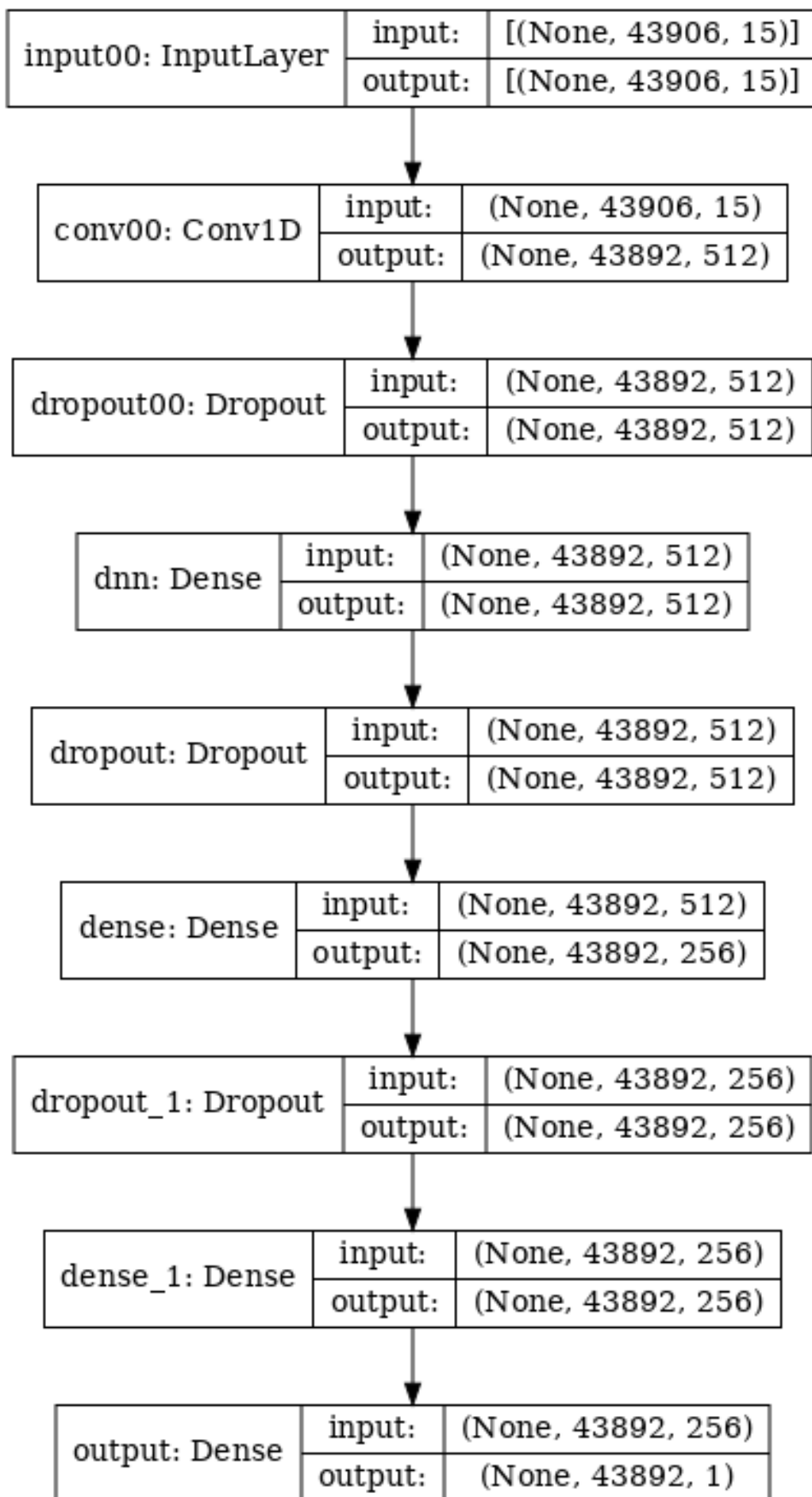
	Model	Time	Epochs	Window Size	Days	Stride	Sampling Rate	\
0	model_best01a	658.977171	31		8	1	2	
1	model_best03a	699.986566	31		8	1	2	
2	model_best03b	500.358927	31		8	1	2	
3	model_dnn01	184.883984	31		8	1	2	

	Batch Size	MSE	MAE
0	128	0.022389	65.391378
1	128	0.022605	65.814023
2	128	0.023344	66.997747
3	128	0.041922	87.206659

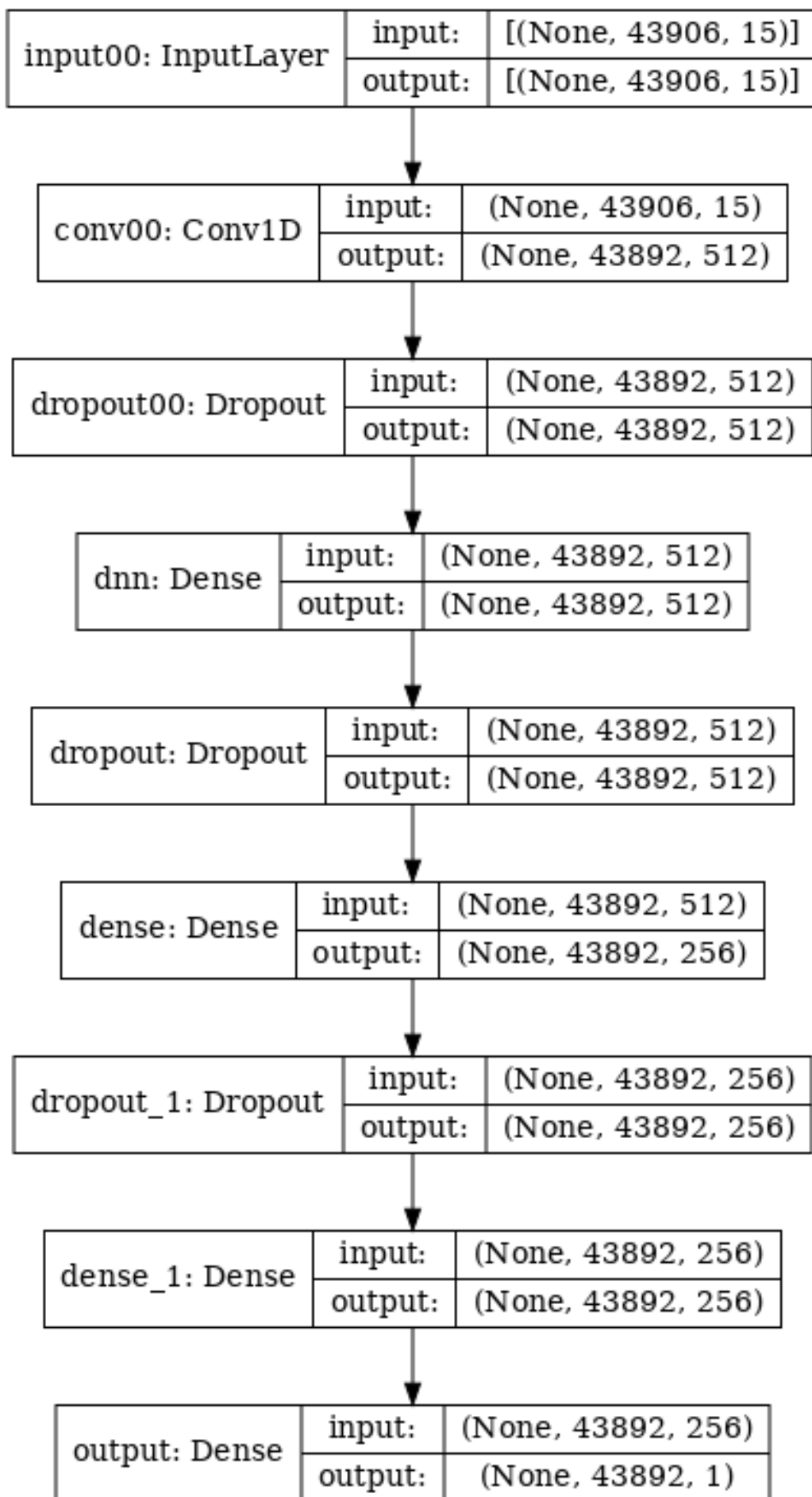


<ggplot: (8735050386285)>

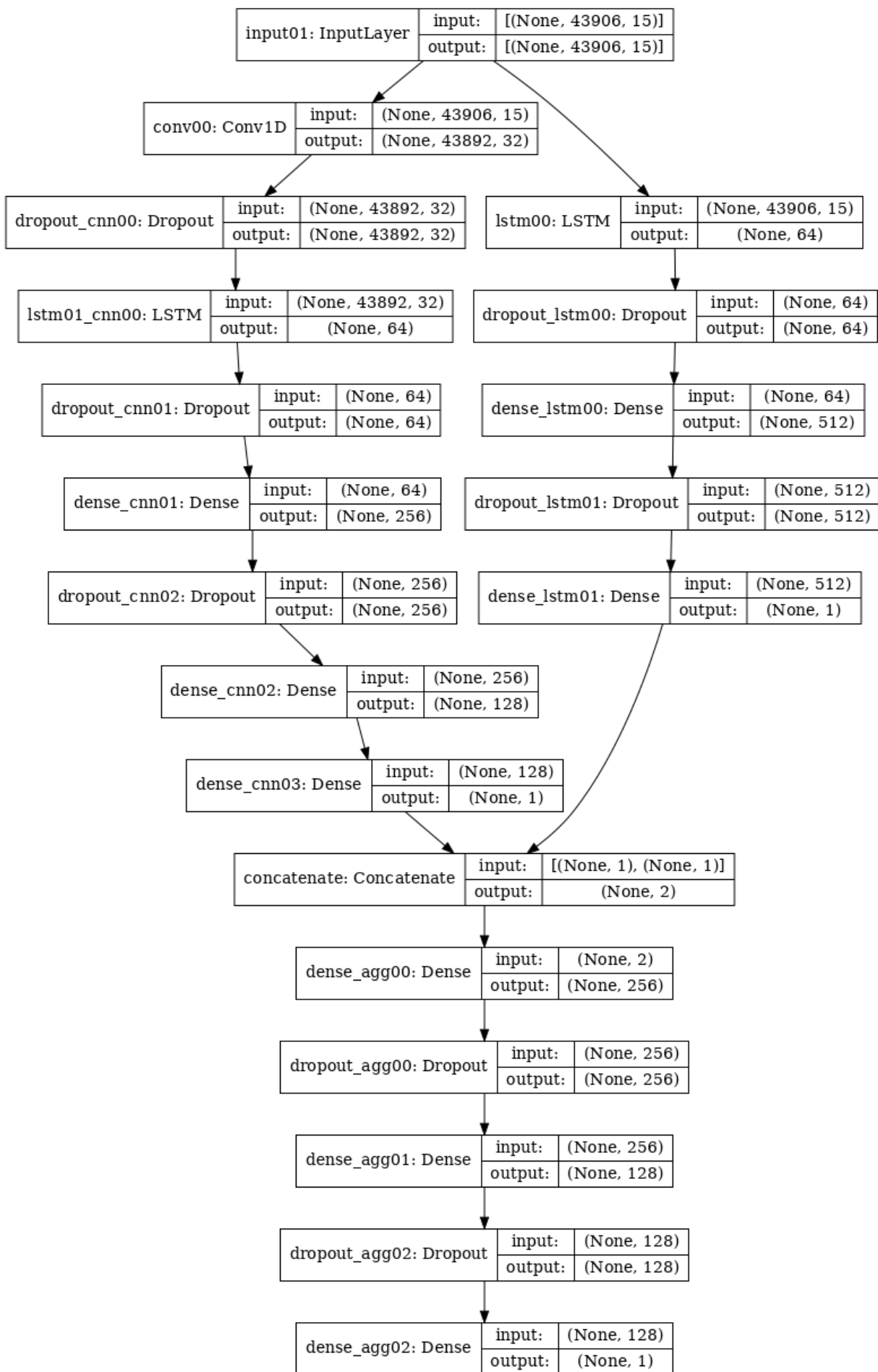
1. Model “model_best01a”



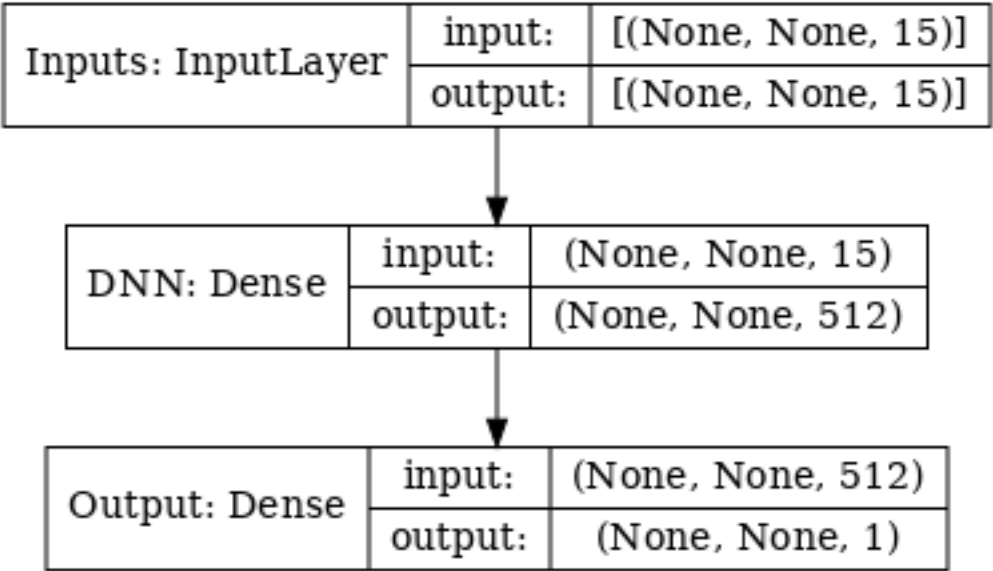
2. Model “model_best03a”



3. Model “model_best03b”



4. Model “model_dnn01”



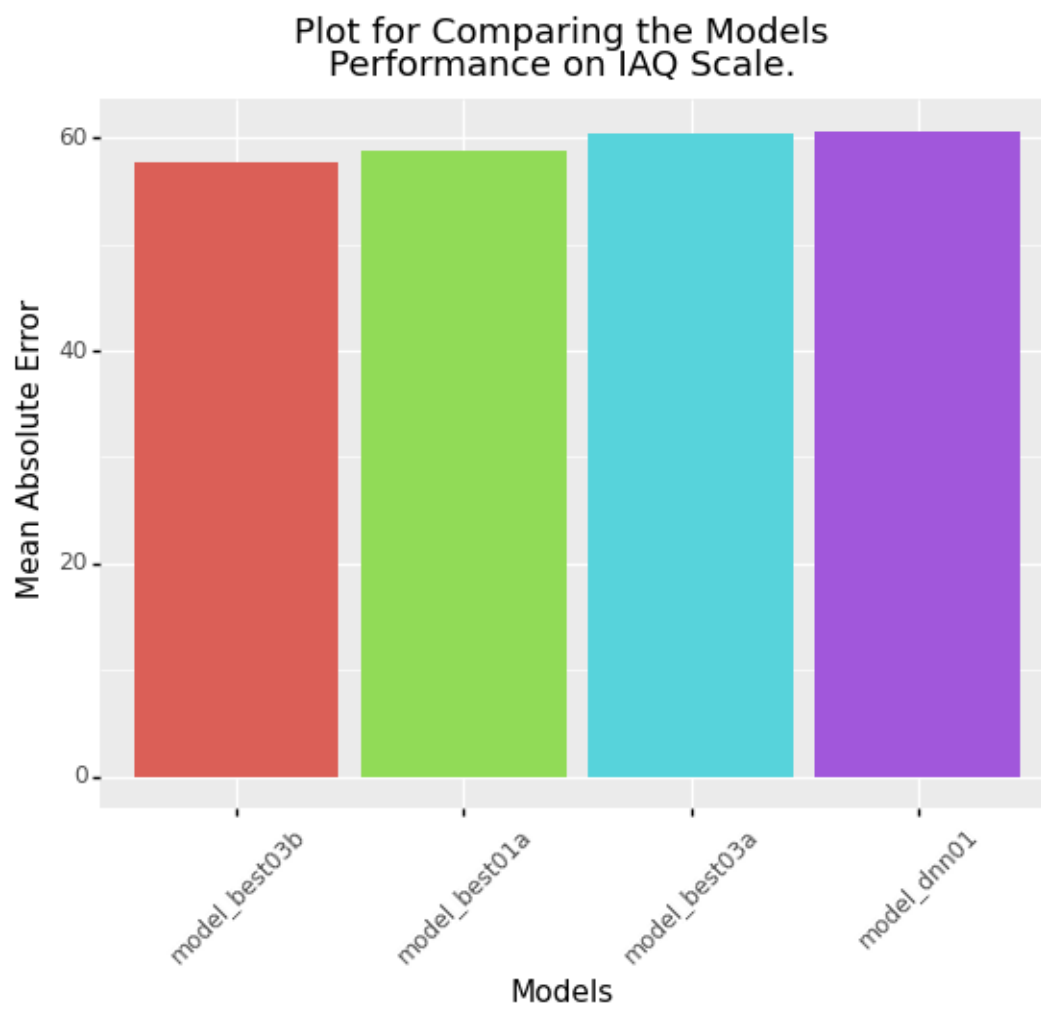
2.2 2 Week History

```
MinMaxScaler()

/opt/intel/oneapi/intelpython/latest/lib/python3.7/site-
packages/sklearn/base.py:334: UserWarning: Trying to unpickle estimator
MinMaxScaler from version 0.22.2.post1 when using version 0.23.2. This might
lead to breaking code or invalid results. Use at your own risk.
```

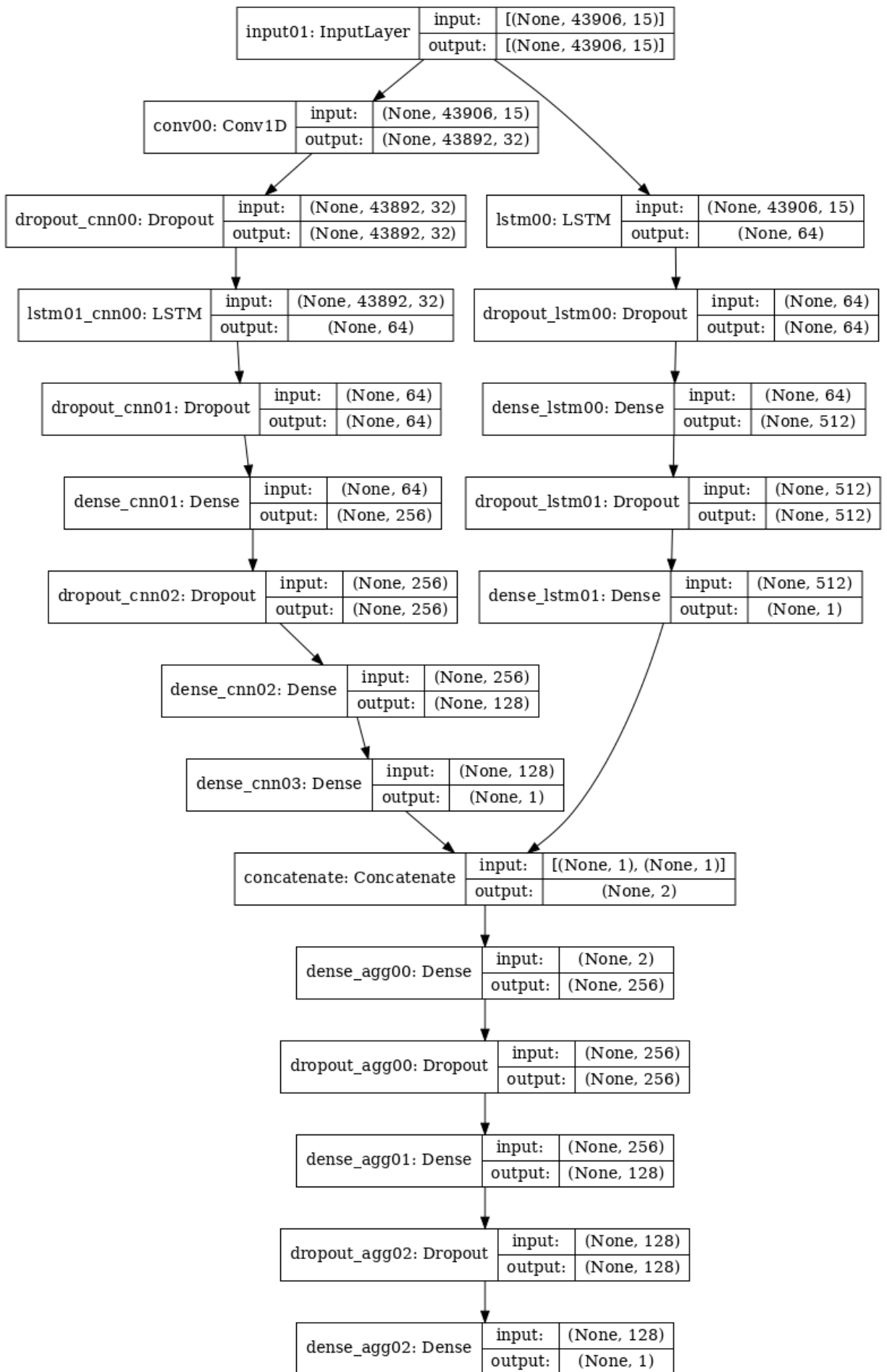
	Model	Time	Epochs	Window Size	Days	Stride	Sampling Rate	\
0	model_best03b	629.414618	28		15	1	2	
1	model_best01a	865.906092	28		15	1	2	
2	model_best03a	864.207575	28		15	1	2	
3	model_dnn01	223.165007	28		15	1	2	

	Batch Size	MSE	MAE
0	128	0.019970	57.656134
1	128	0.019819	58.824076
2	128	0.020162	60.483345
3	128	0.020358	60.661538

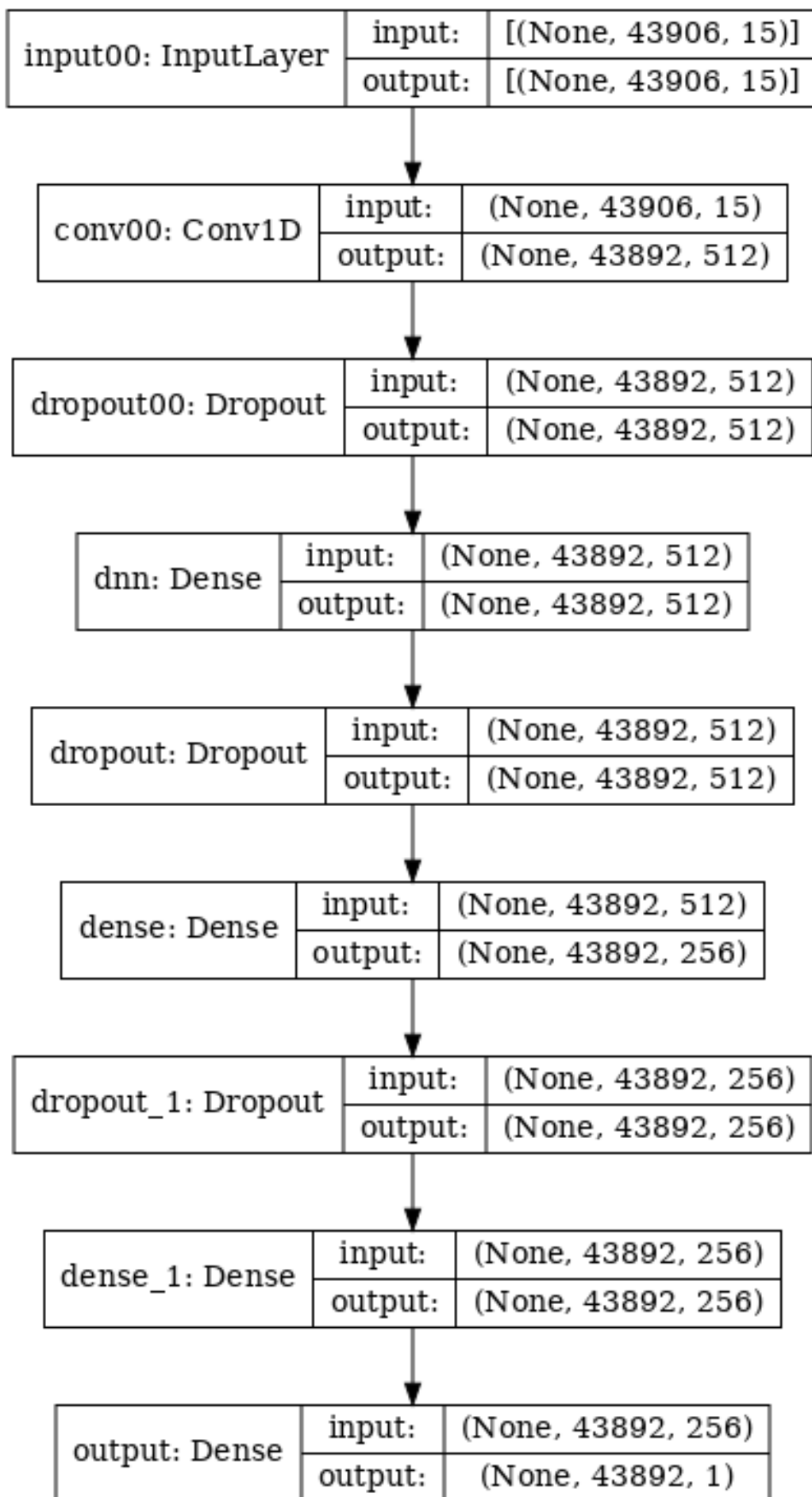


<ggplot: (8735050229137)>

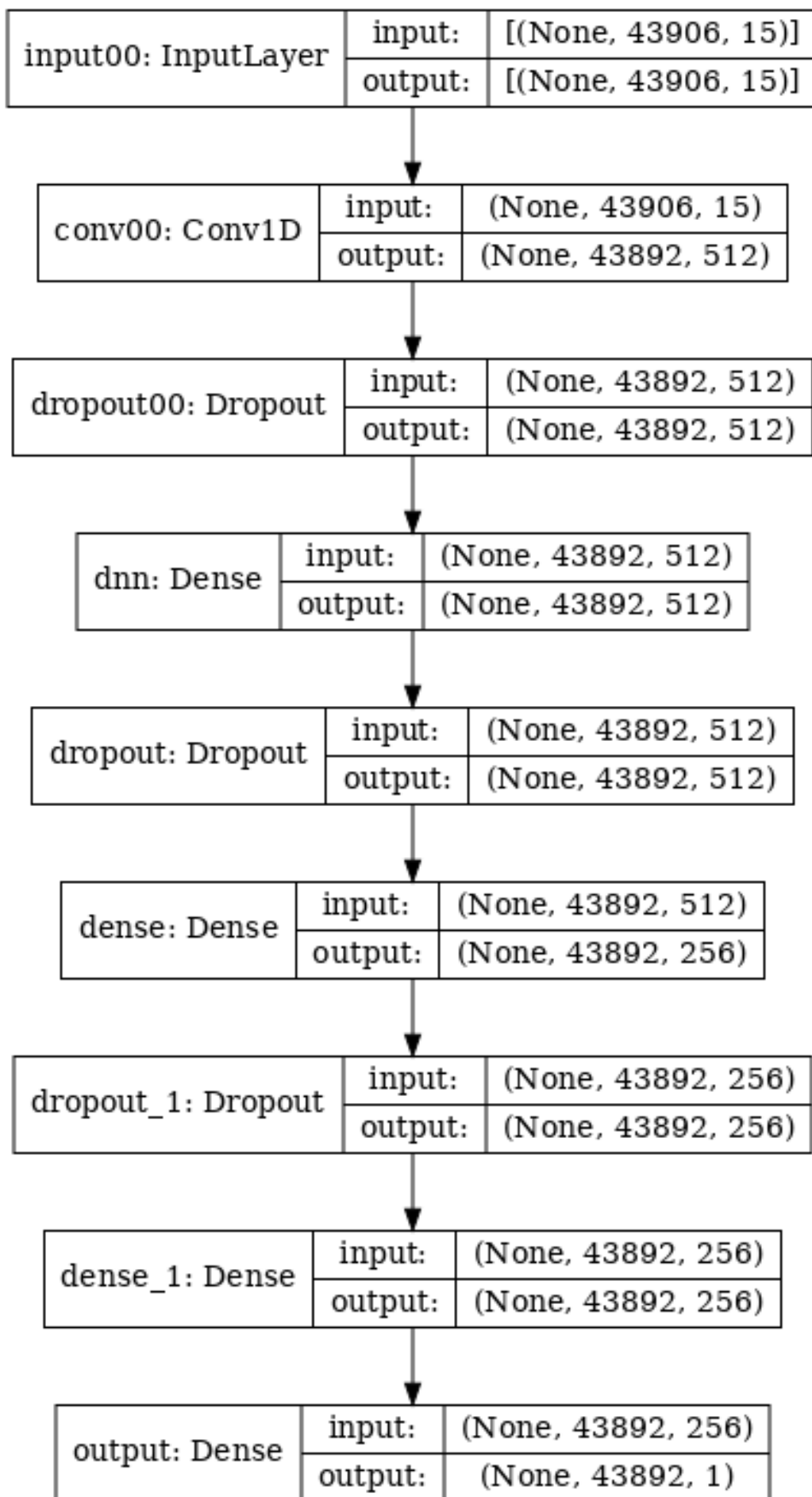
1. Model "model_best03b"



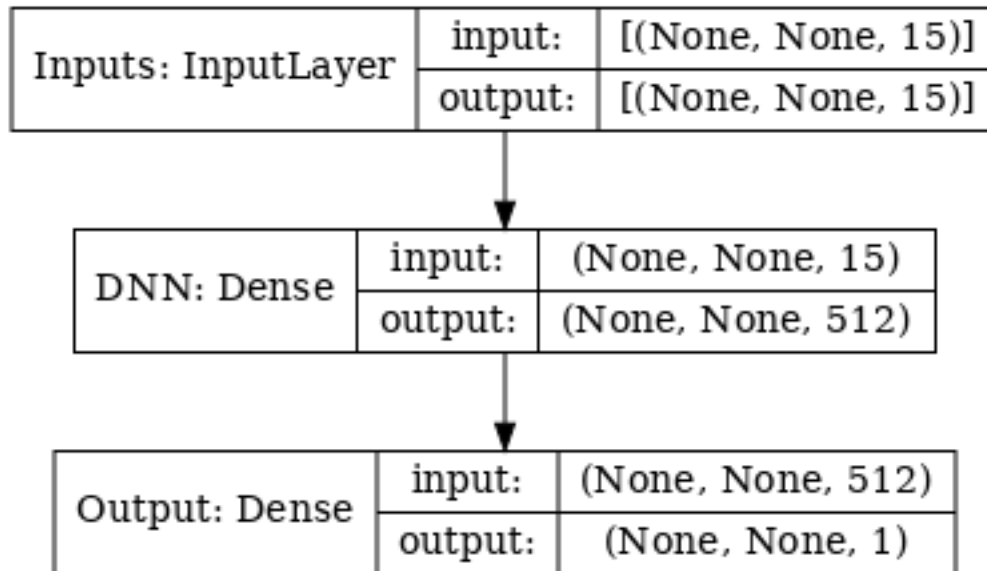
2. Model “model_best01a”



3. Model “model_best03a”



4. Model “model_dnn01”



3 Referencias

- Keras contributors et al. [Keras / Code examples / Timeseries / Timeseries forecasting for weather prediction](#). 2021.
- Tensorflow Contributors. [Tensorflow: Tutorial on Time series forecasting](#)Time series forecasting. 2021.
- Román-Rangel, Francisco. Notas y Código del Curso de Aprendizaje Profundo. 2021.
- González-Pérez, Felipe. [Notas de aprendizaje de máquina \(2020\)](#)