MULTIVARIATE DEEP SEQUENCES

## ADDITIONAL NOISE AND IMPULSE FUNCTIONS

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ADDITIONAL NOISE CHANNEL

- DATA = PD.READ_CSV('HTTPS://RAW.GITHUBUSERCONTENT.COM/JAUNGIERS/MVTAE-MULTIVARIATE-TEMPORAL-AUTOENCODER/MASTER/DATA.CSV', HEADER=0)

- DATA.LOC[:,'NOISE2'] = 6.0 * DATA['NOISE']

- DATA.LOC[DATA.INDEX[[0, -1]], 'NOISE2'] = DATA.LOC[DATA.INDEX[[-1, 0]], 'NOISE2'].TO_NUMPY()

- DATA = DATA[['NOISE', 'NOISE2', 'SINE_1', 'SINE_2', 'COMBINED']]

ADDING NOISE

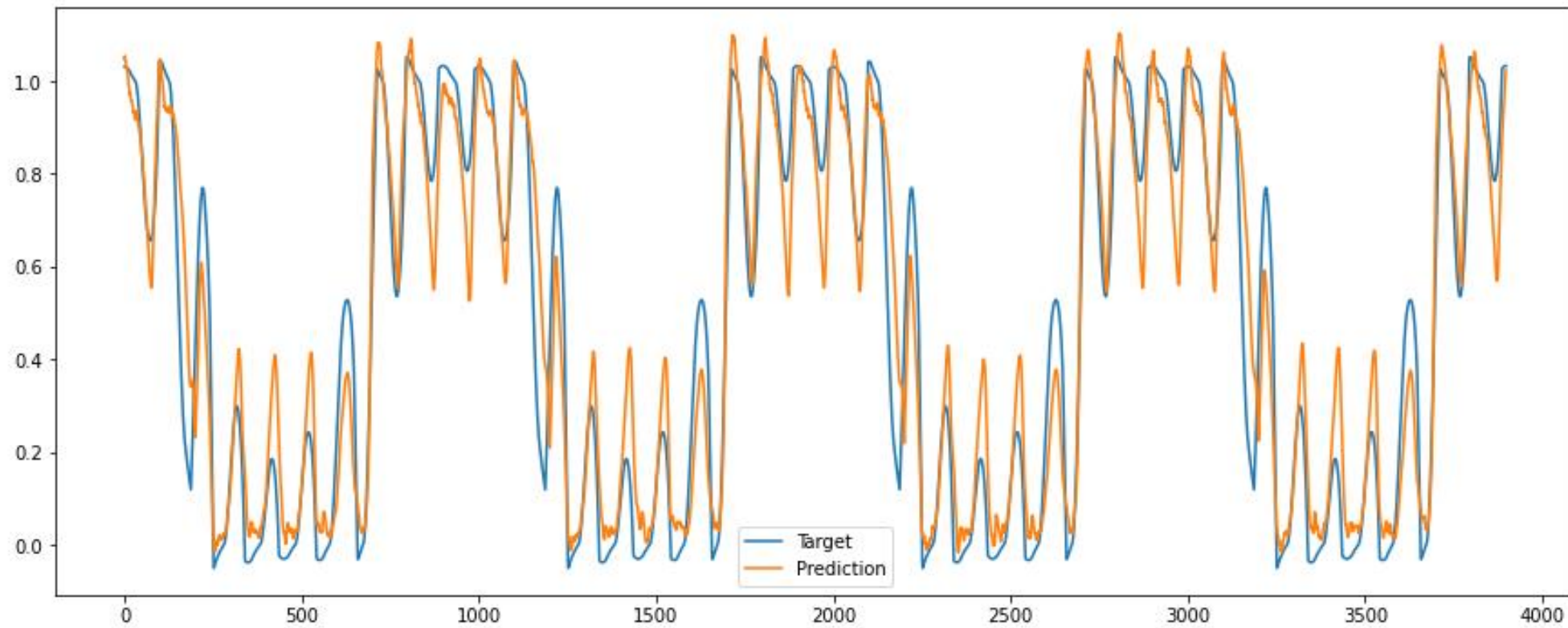- A second noise signal is introduced, whose amplitude matches the sine_2 signal.
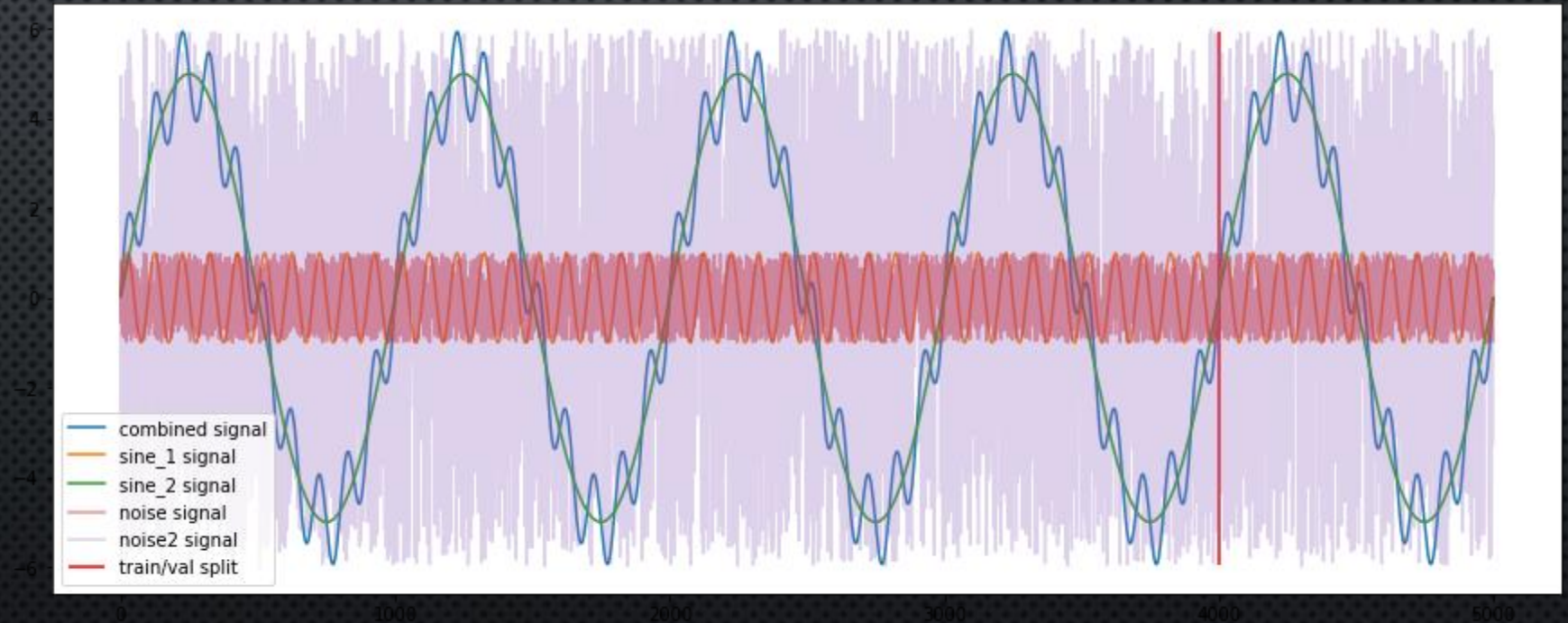
ALPHA TARGET BRANCH PREDICTION (+NOISE_2)

Error/Accuracy Metrics
MSE: 0.015593480522349067
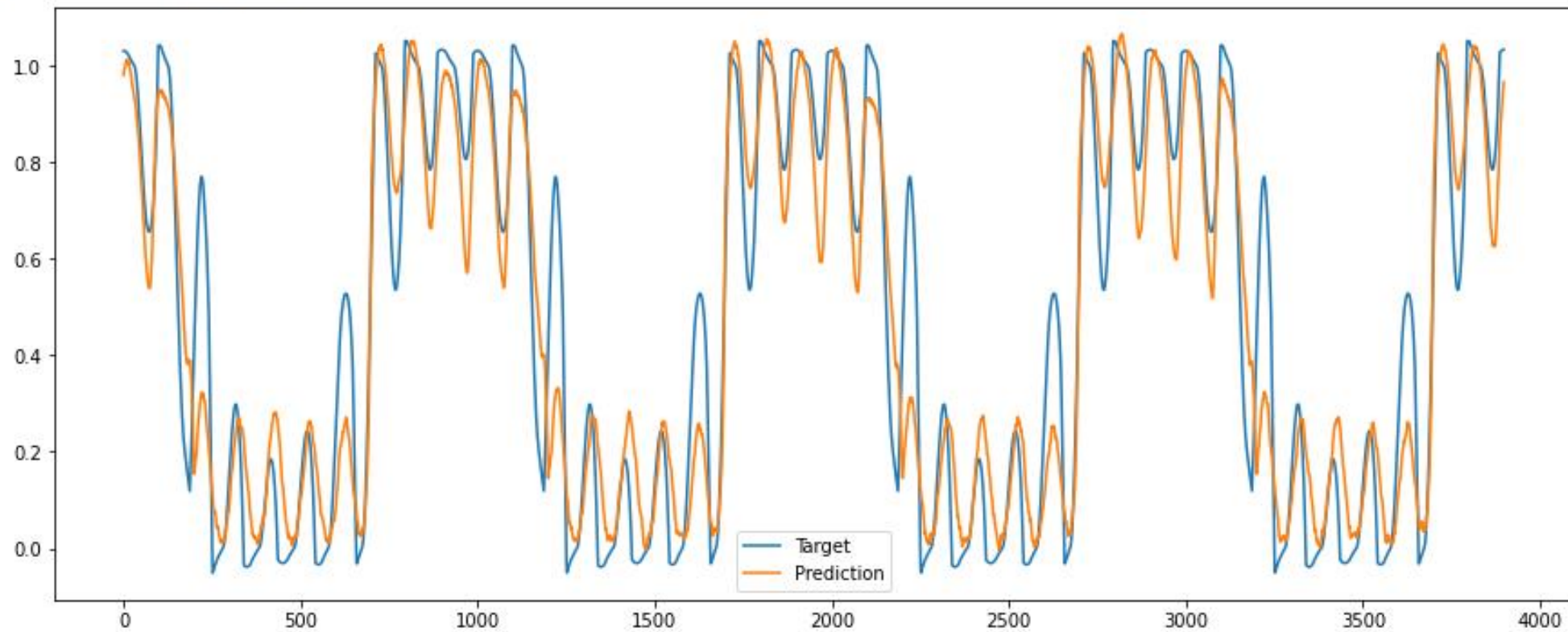MAE: 0.09261358834597325
R²: 0.9046507809133729
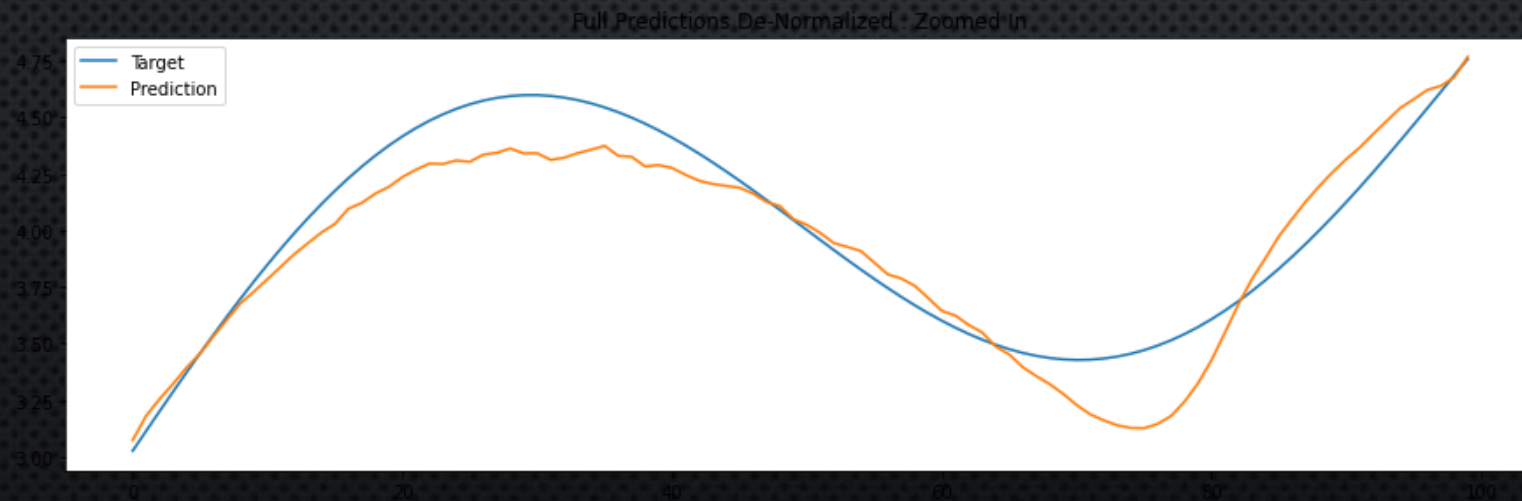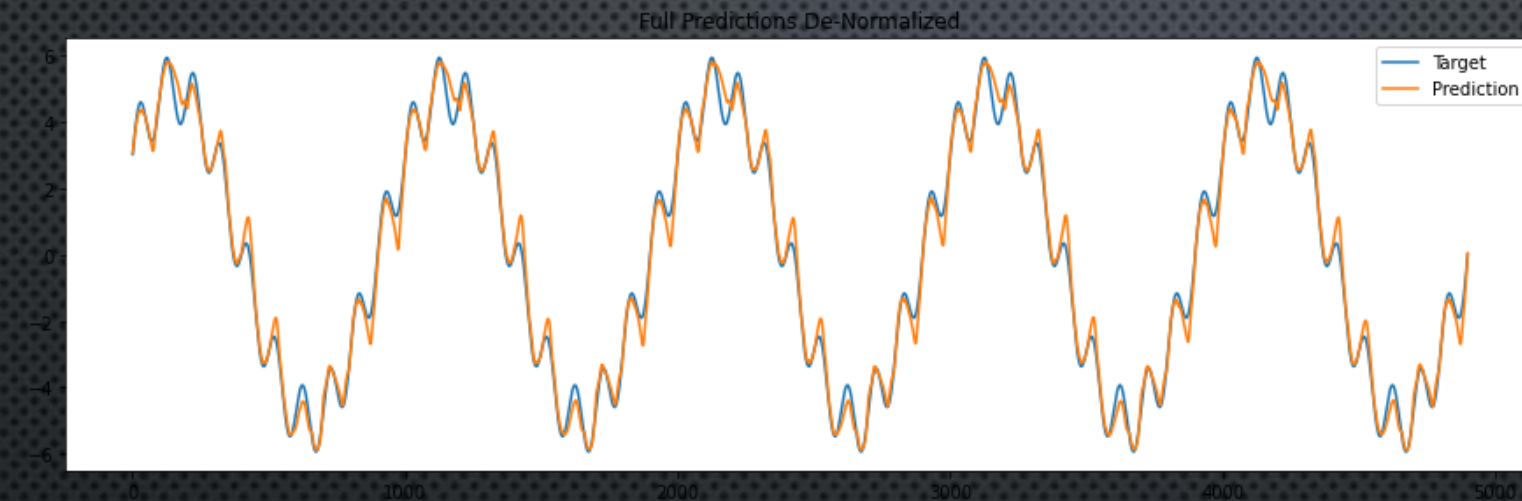
ALPHA TARGET BRANCH PREDICTION (ORIGINAL)

FULL PREDICTION DENORMALIZED (+NOISE_2)

FULL PREDICTION DENORMALIZED (ORIGINAL)

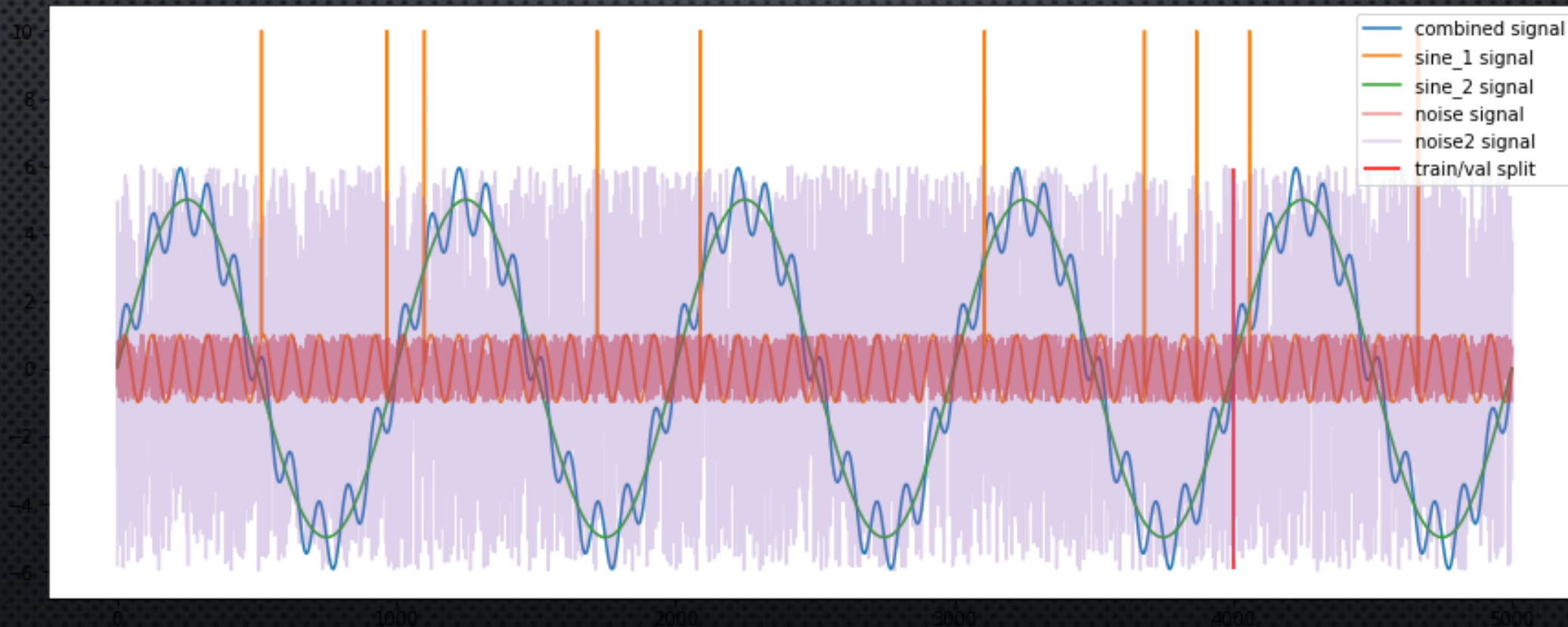Full Predictions De-Normalized

Full Predictions De-Normalized : Zoomed In
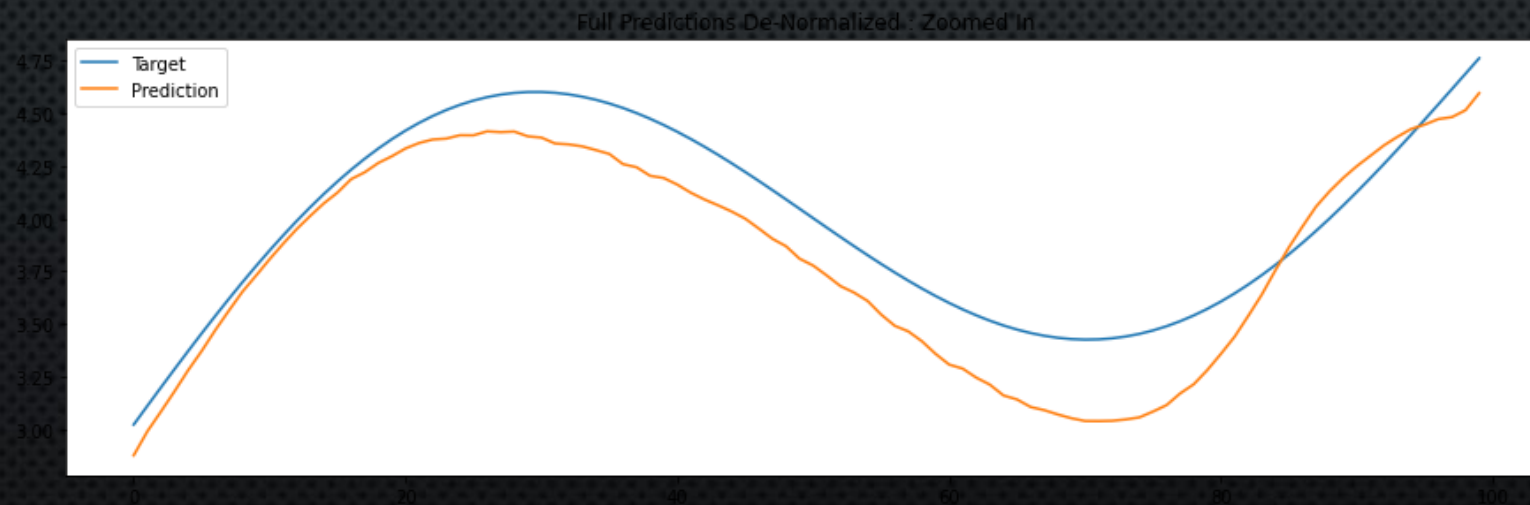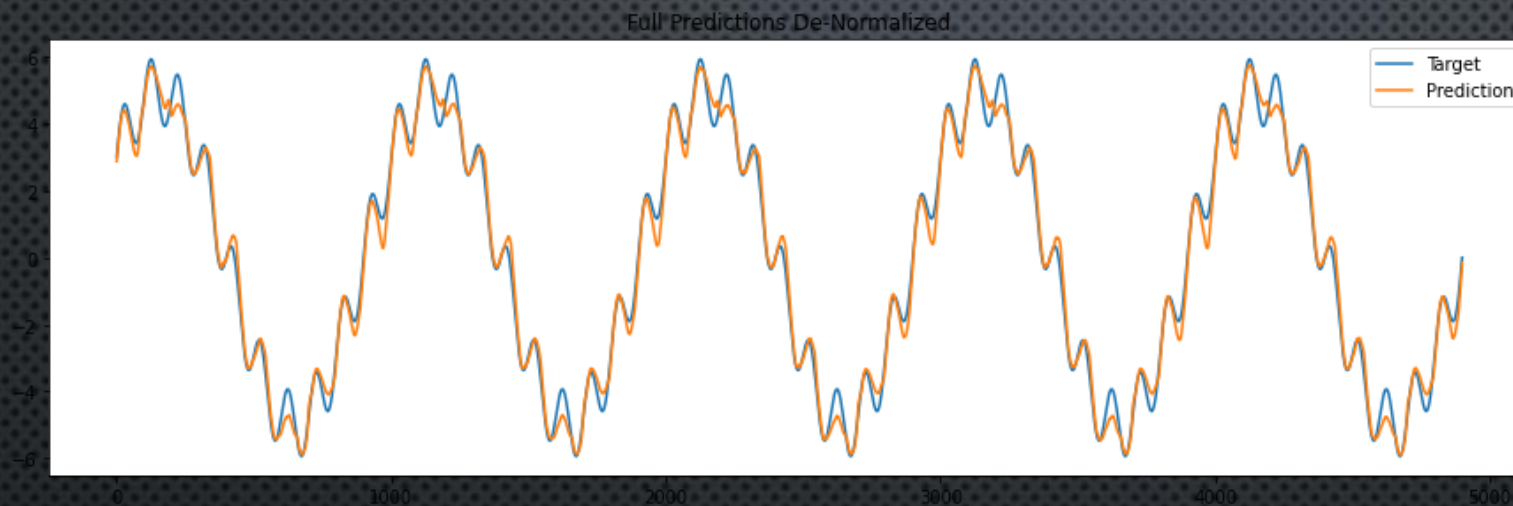
OVERLAY IMPULSE TO SINE_1

- DATA = DATA[['NOISE', 'NOISE2', 'SINE_1', 'SINE_2', 'COMBINED']]

- SEED(1)

- FOR I IN RANGE(10):

-     R = RANDINT(0,4999)

-     DATA.LOC[R,'SINE_1'] = 10
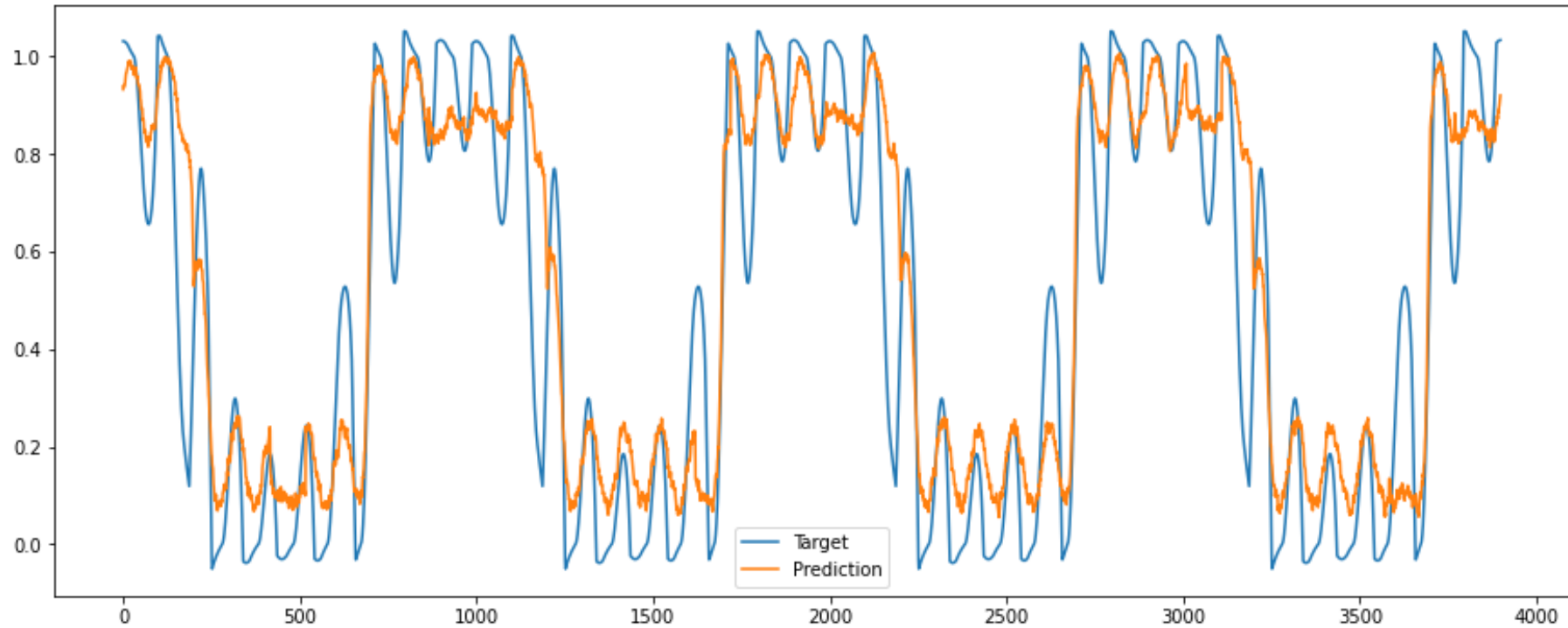
ALPHA TARGET BRANCH PREDICTION (+NOISE_2 AND IMPULSE)

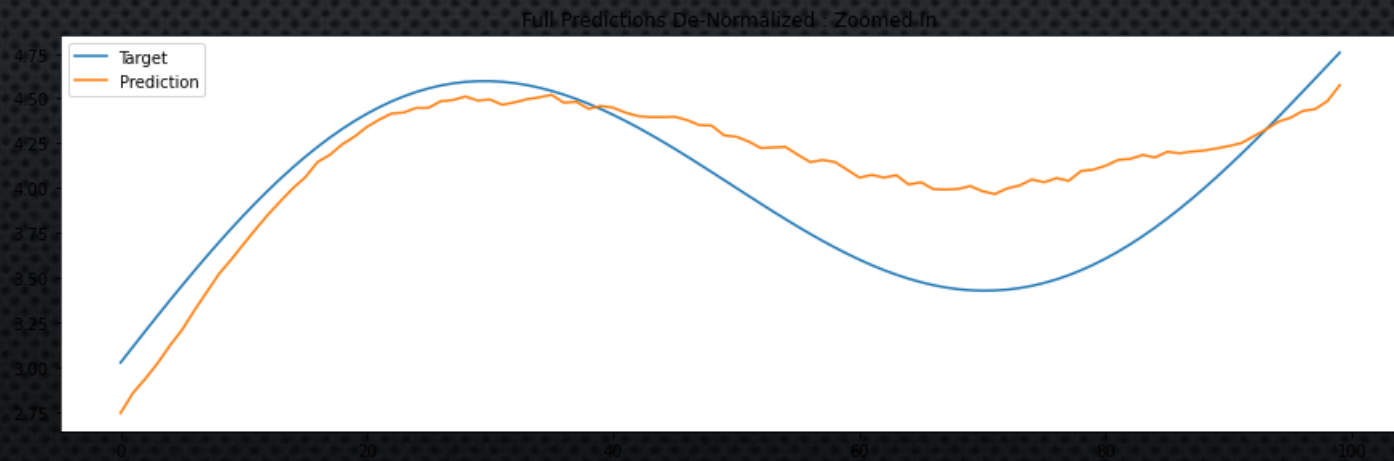# ALPHA TARGET BRANCH PREDICTION (+NOISE_2 AND IMPULSE)

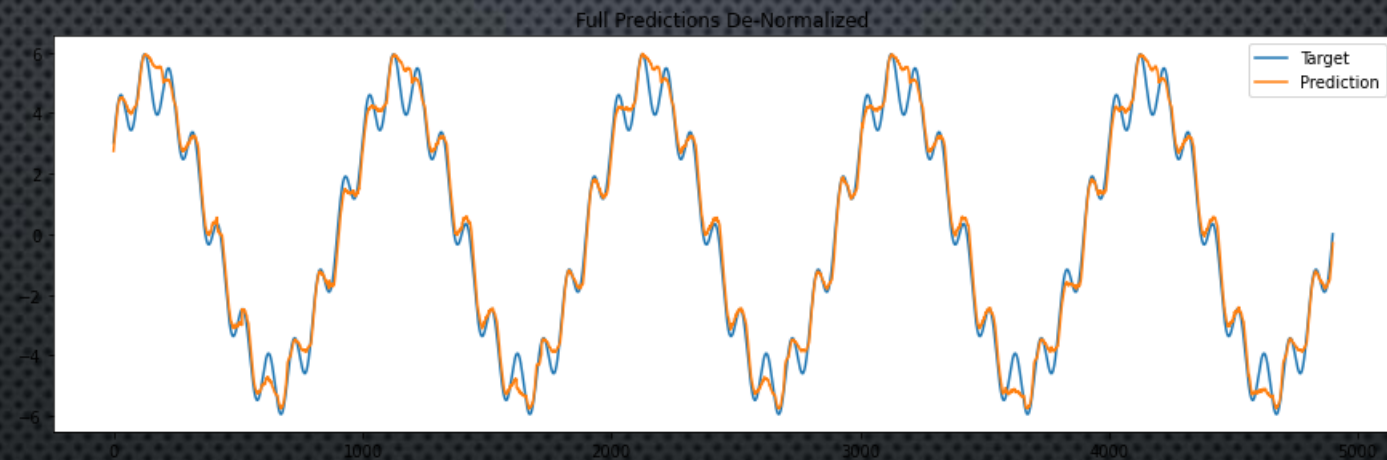# FULL PREDICTION DENORMALIZED (+NOISE_2 AND IMPULSE)

OVERLAY IMPULSE OF COMBINED

- DATA = DATA[['NOISE', 'NOISE2', 'SINE_1', 'SINE_2', 'COMBINED']]

- SEED(1)

- FOR I IN RANGE(10):

-     R = RANDINT(0,4999)

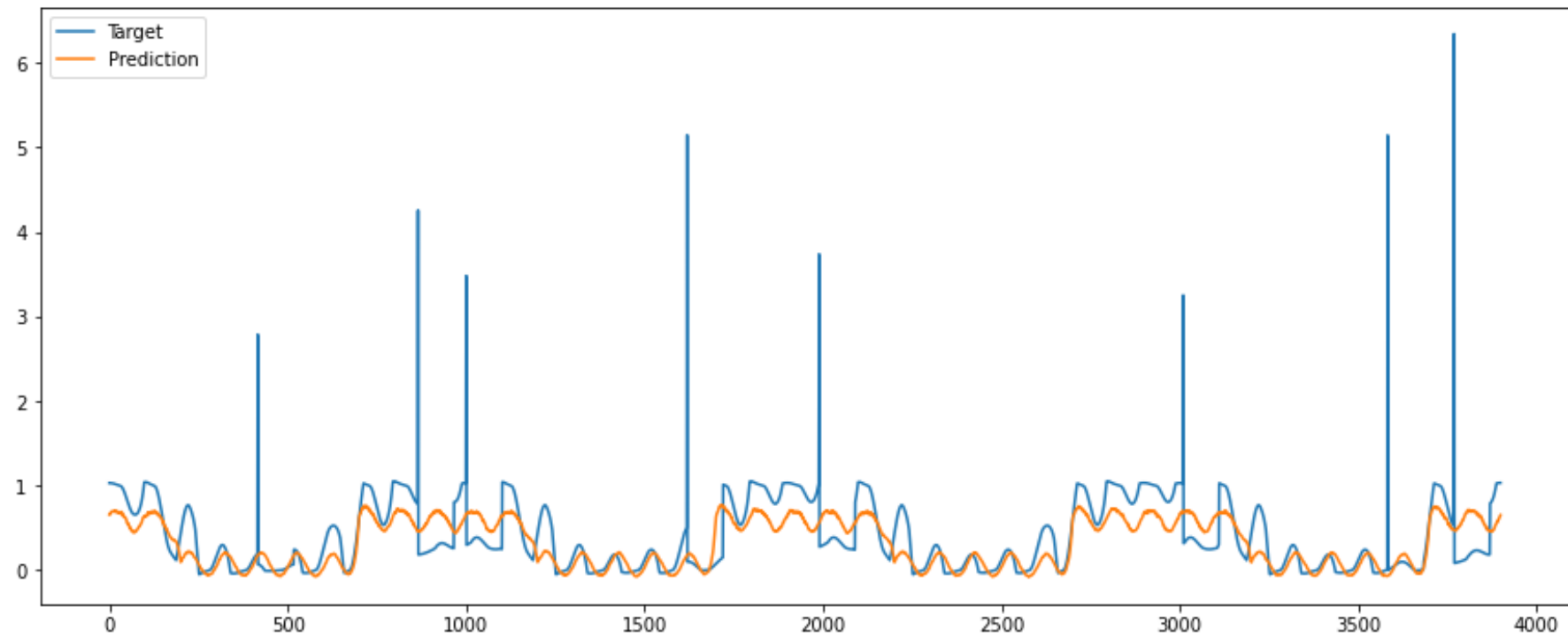-   PRINT(DATA.LOC[R,'COMBINED'])

-     DATA.LOC[R,'COMBINED'] = 10

ALPHA TARGET BRANCH PREDICTION (+NOISE_2 AND IMPULSE)

FULL PREDICTION DENORMALIZED (+NOISE_2 AND IMPULSE)