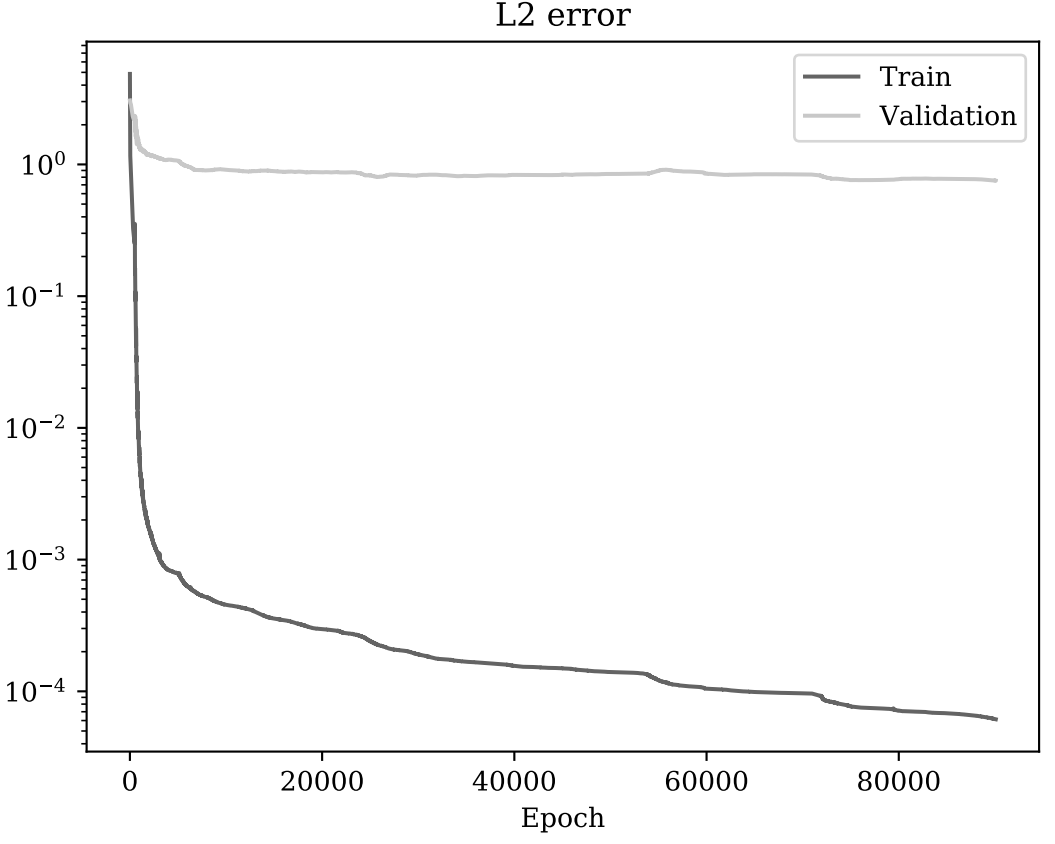
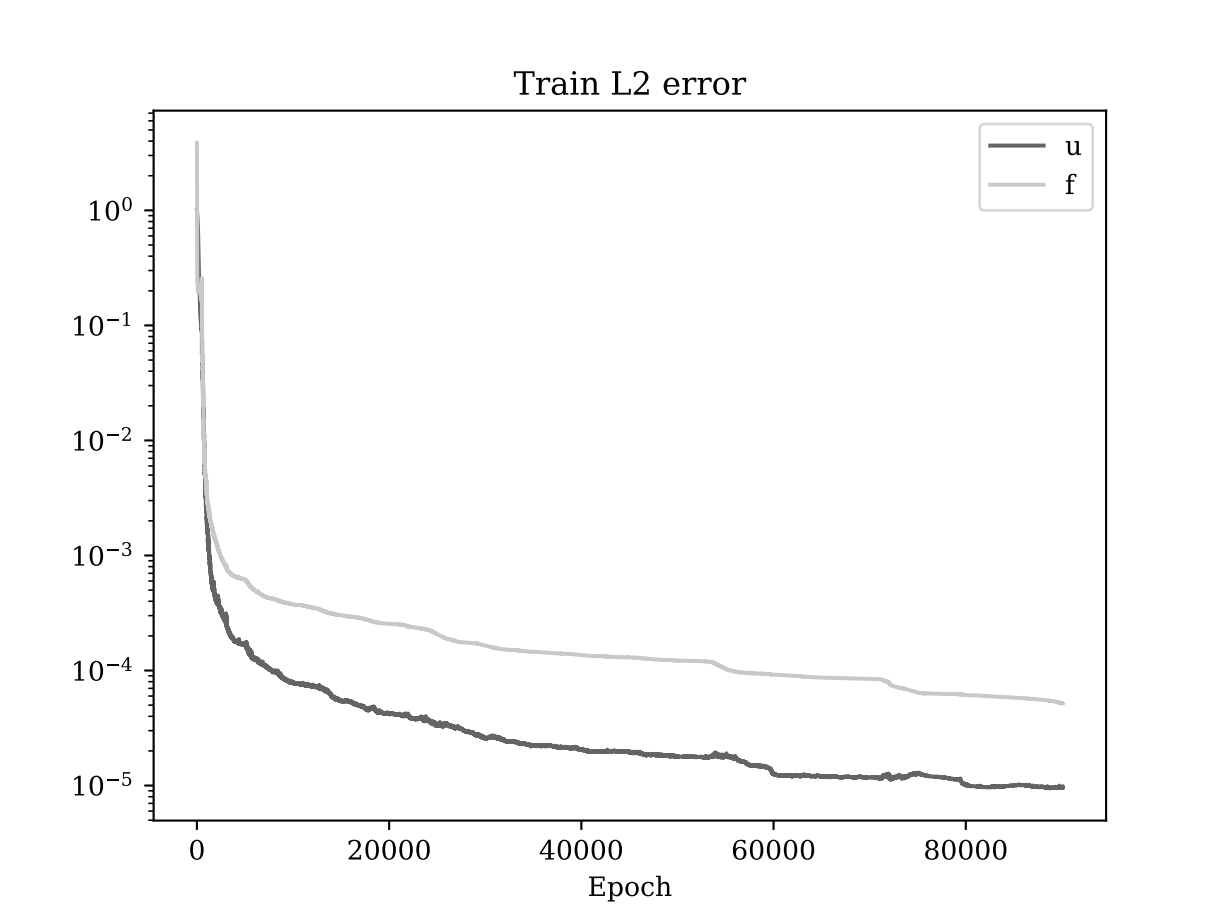
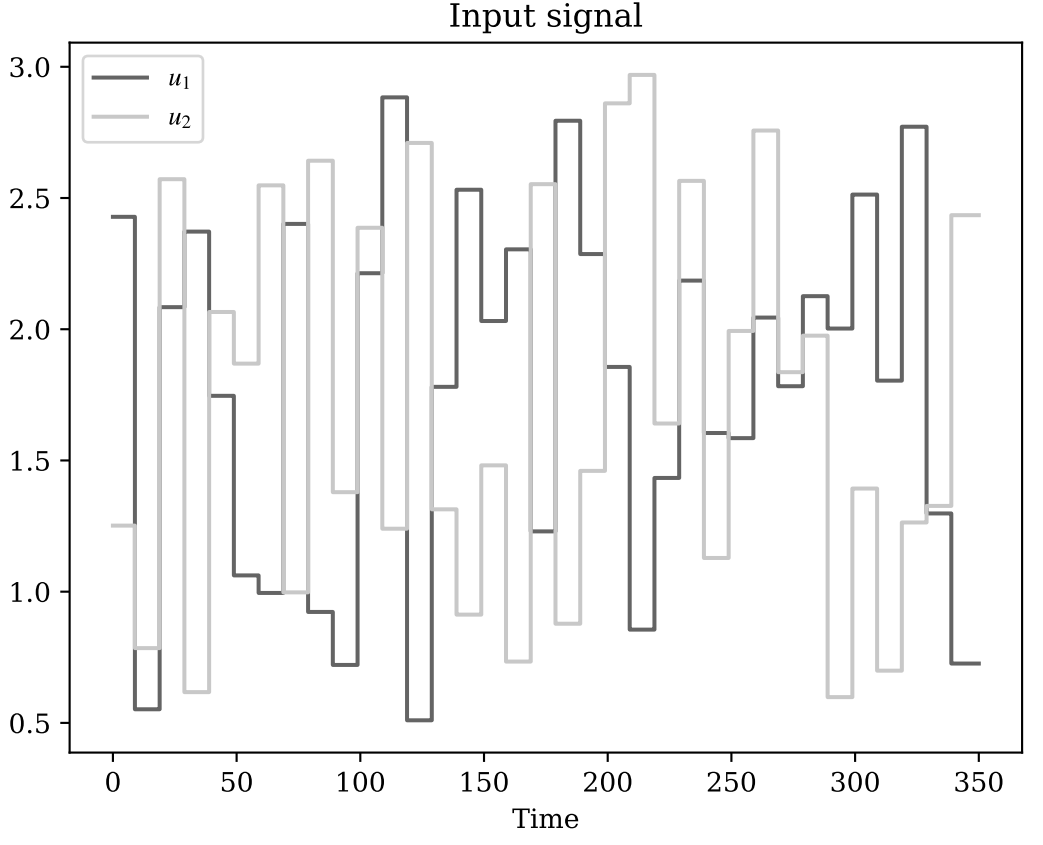
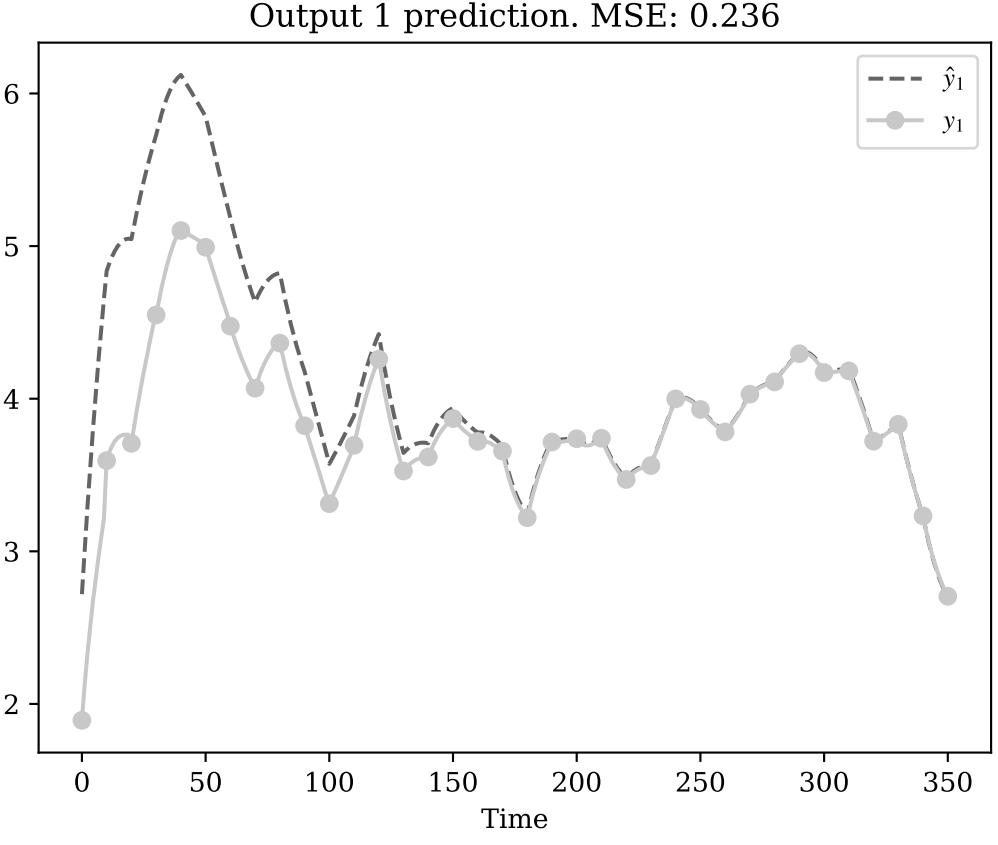
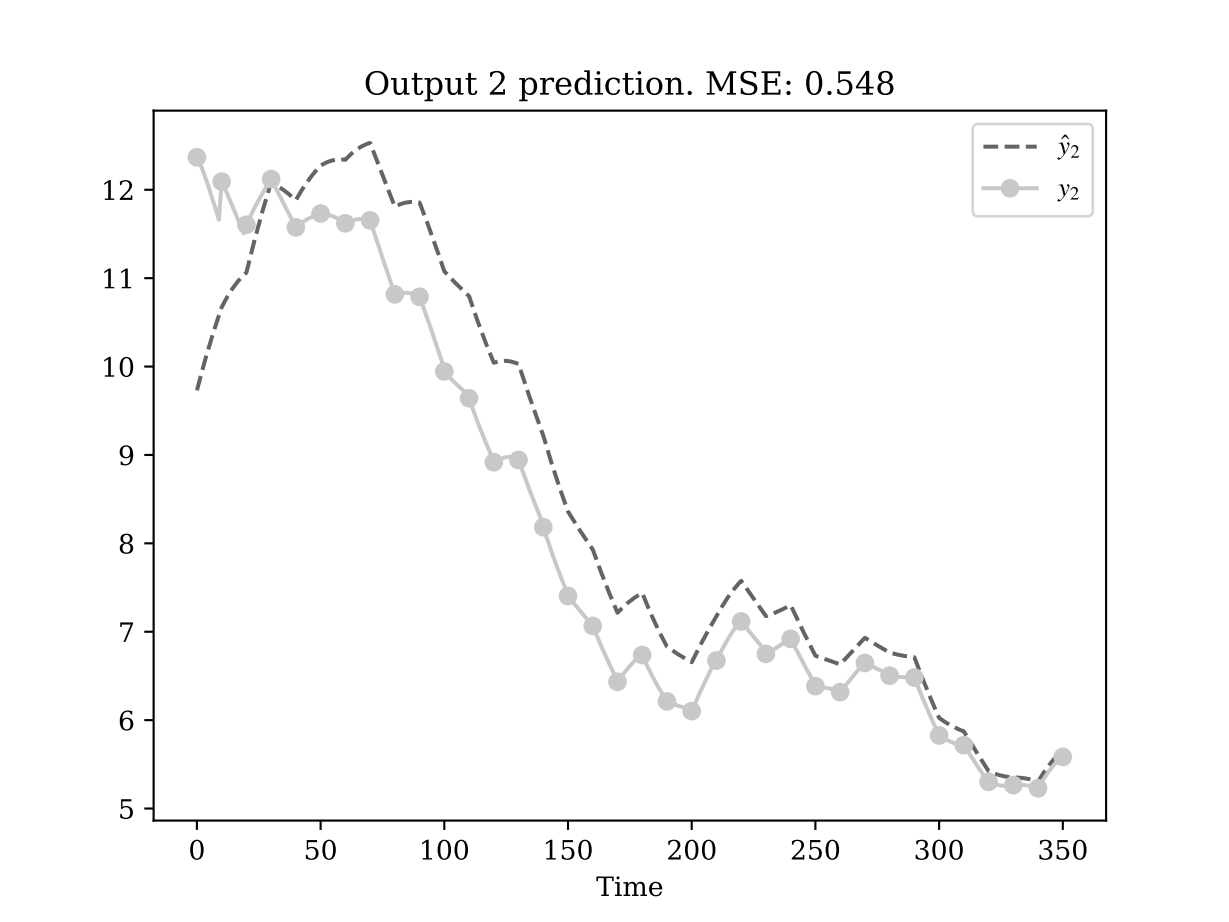
Exhaustion test:
Test duration -> 2 days, 19:34:38.679912
Adam epochs -> 500
L-BFGS iterations -> 30000
Neural network's structure -> 8 hidden layers of 20 neurons
Train T -> 10.0 s
Train Nu -> 1000
Train Nf -> 100000
Validation points -> 3160
Validation T -> 10.0 s
Test points -> 316
Test T -> 10.0 s

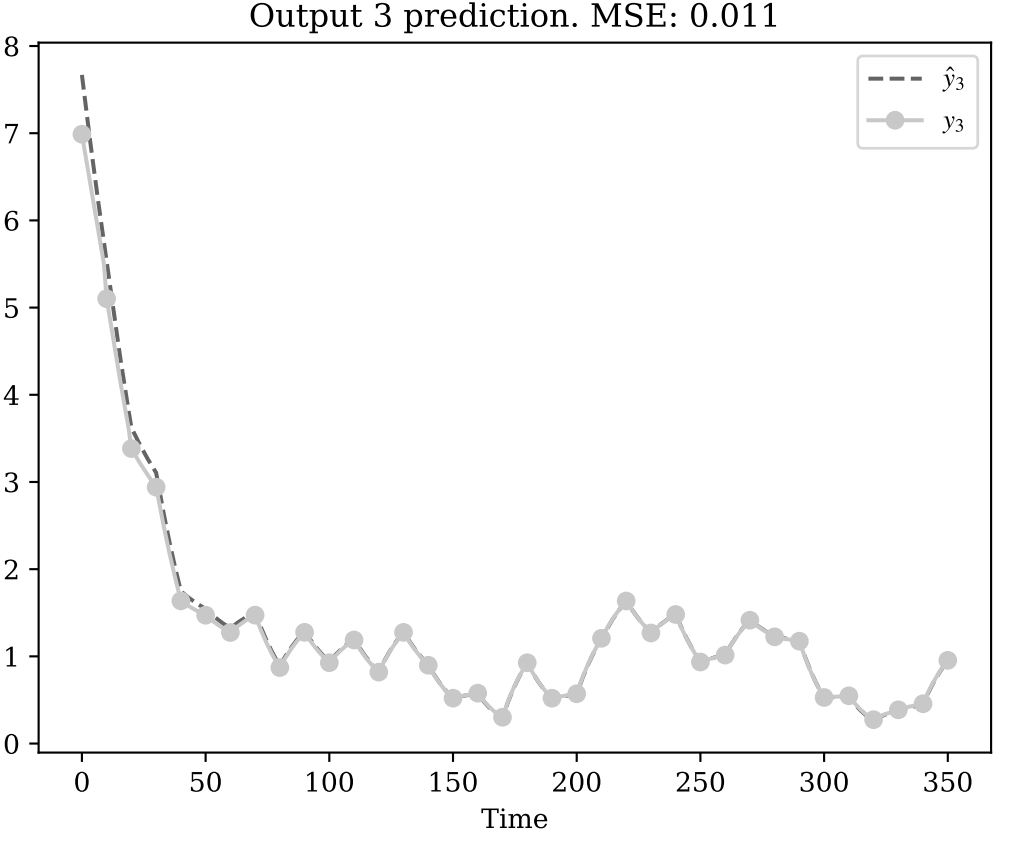

L2 error
Train
Validation
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
0
20000
40000
60000
80000
Epoch

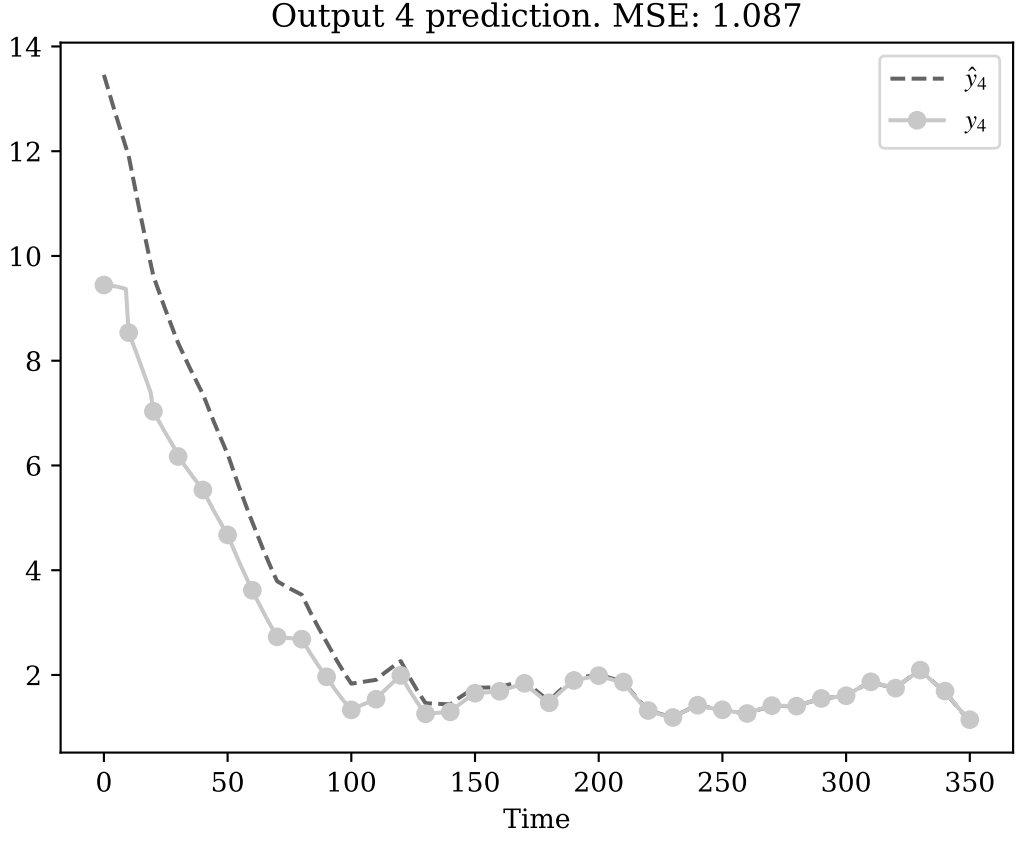

Train L2 error
u
f
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
20000
40000
60000
80000
Epoch


Input signal
u_1
u_2
3.0
2.5
2.0
1.5
1.0
0.5
0
50
100
150
200
250
300
350
Time


Output 1 prediction. MSE: 0.236
$\hat{y}_1$
y_1
6
5
4
3
2
0
50
100
150
200
250
300
350
Time


Output 2 prediction. MSE: 0.548
$\hat{y}_2$
y_2
12
11
10
9
8
7
6
5
0
50
100
150
200
250
300
350
Time


Output 3 prediction. MSE: 0.011
$\hat{y}_3$
y_3
0
1
2
3
4
5
6
7
8
0
50
100
150
200
250
300
350
Time


Output 4 prediction. MSE: 1.087
$\hat{y}_4$
y_4
14
12
10
8
6
4
2
0
50
100
150
200
250
300
350
Time