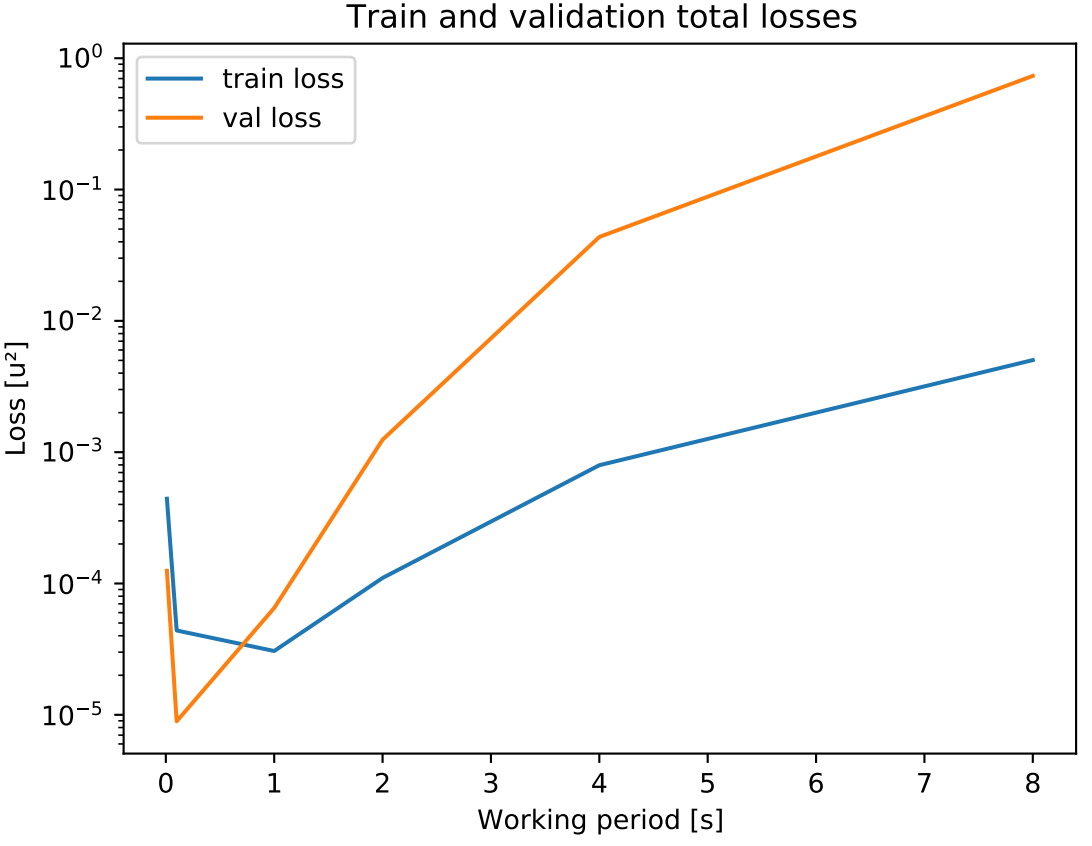
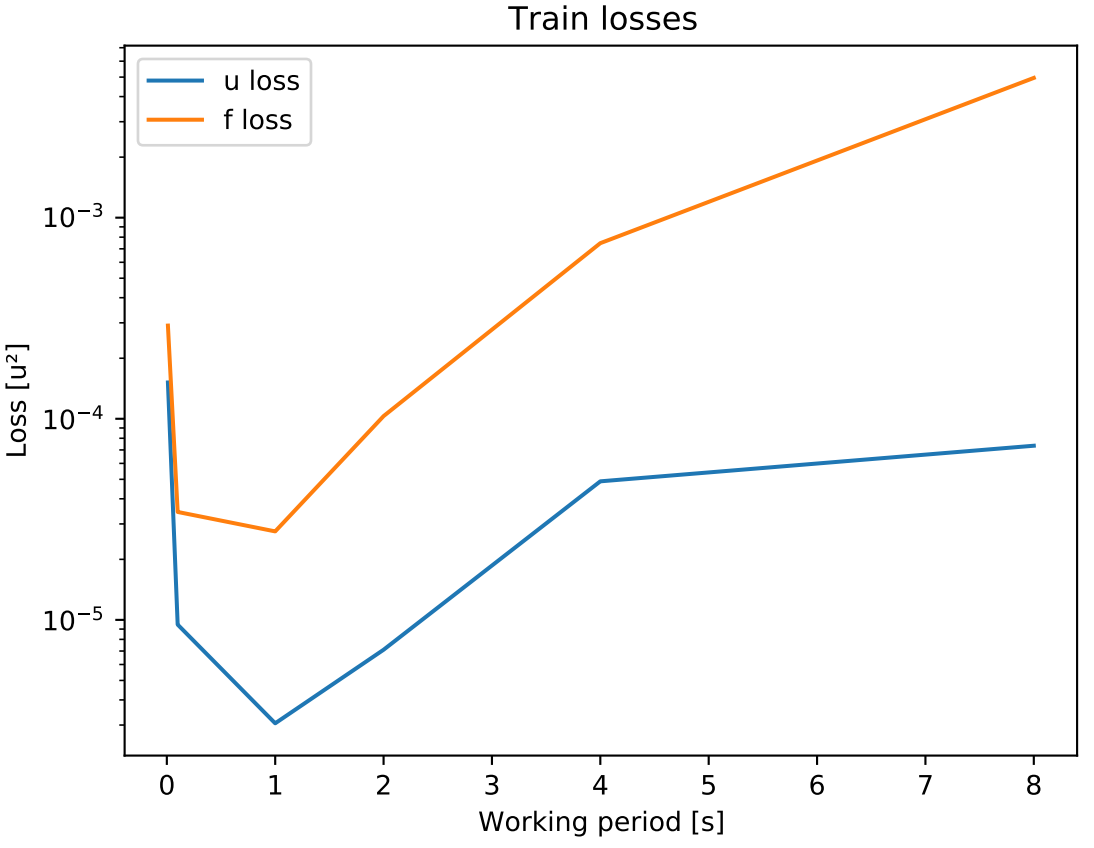
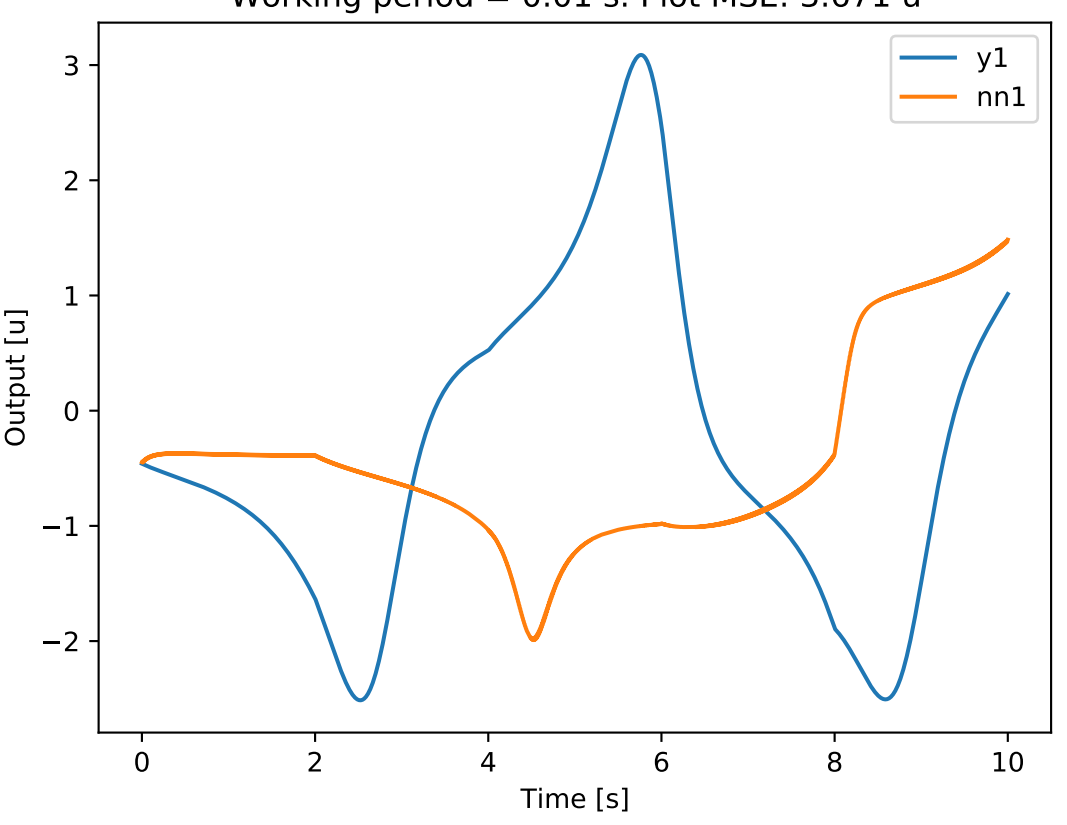
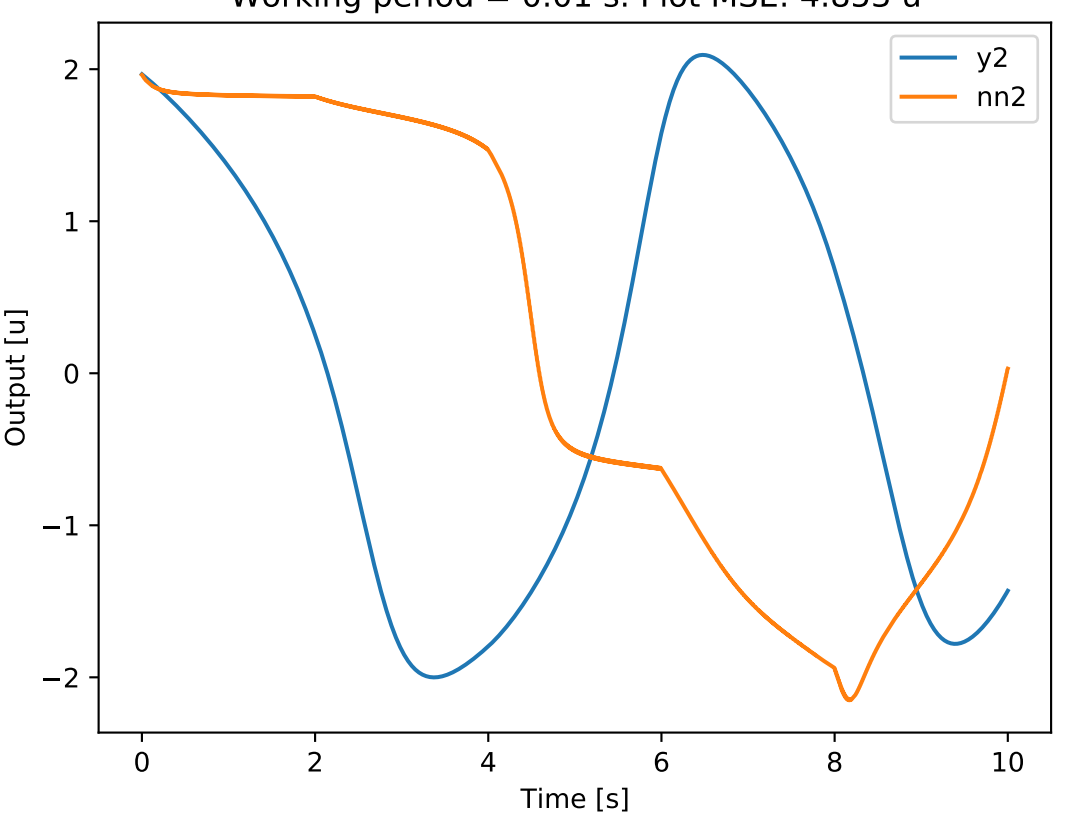
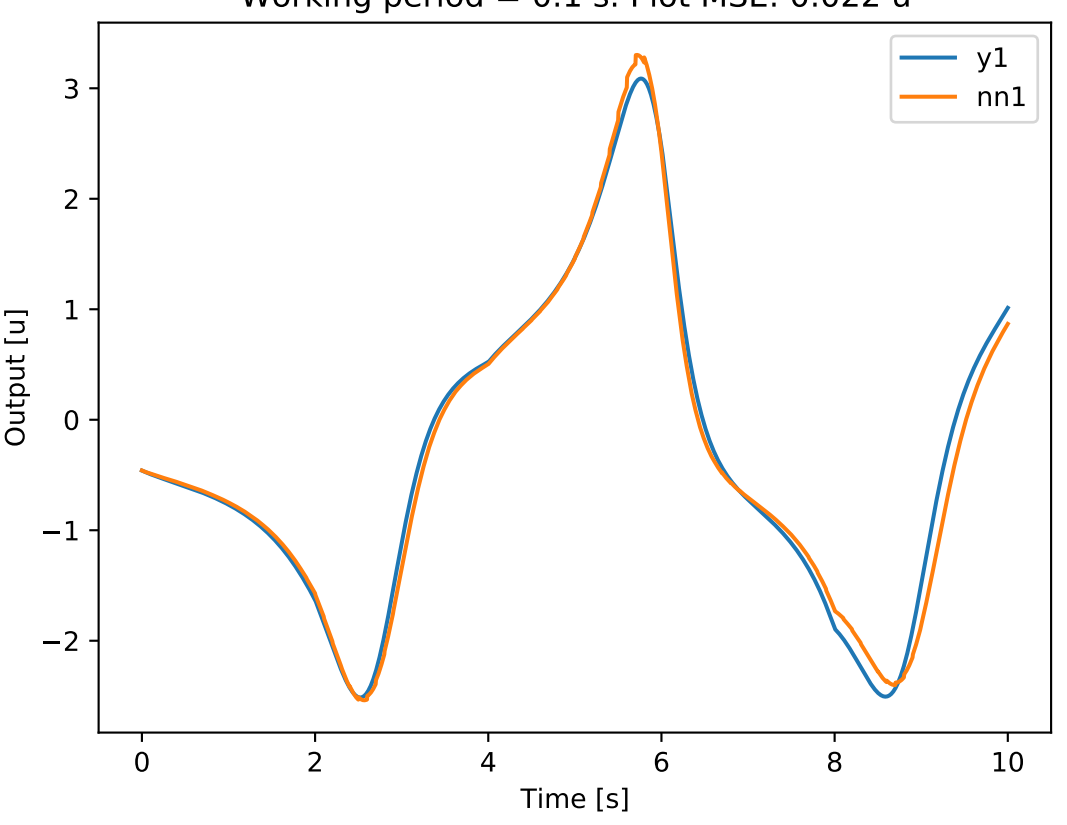
One tank neural network's working period test:
Adam epochs -> 500
Max L-BFGS iterations -> 2000
Train Nu -> 1000
Train Nf -> 100000
Validation points -> 10000
Test points -> 10000

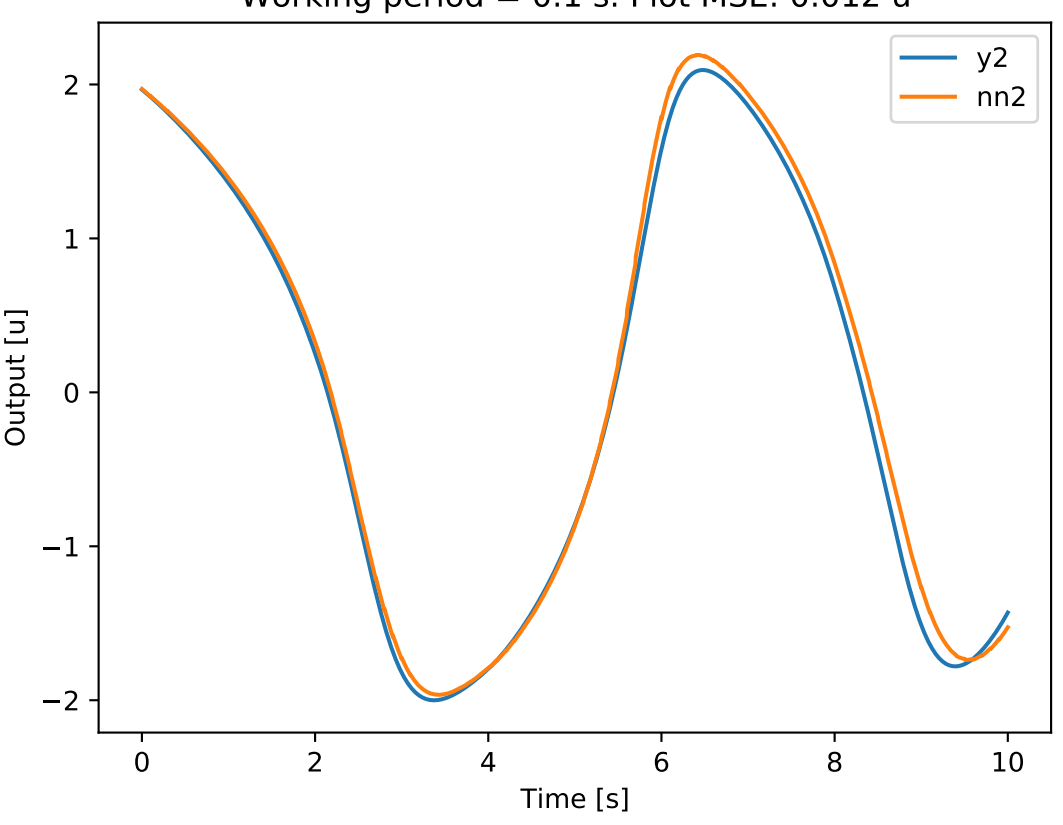

Train and validation total losses
train loss
val loss
Loss [u²]
Working period [s]
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{-5}
0
1
2
3
4
5
6
7
8

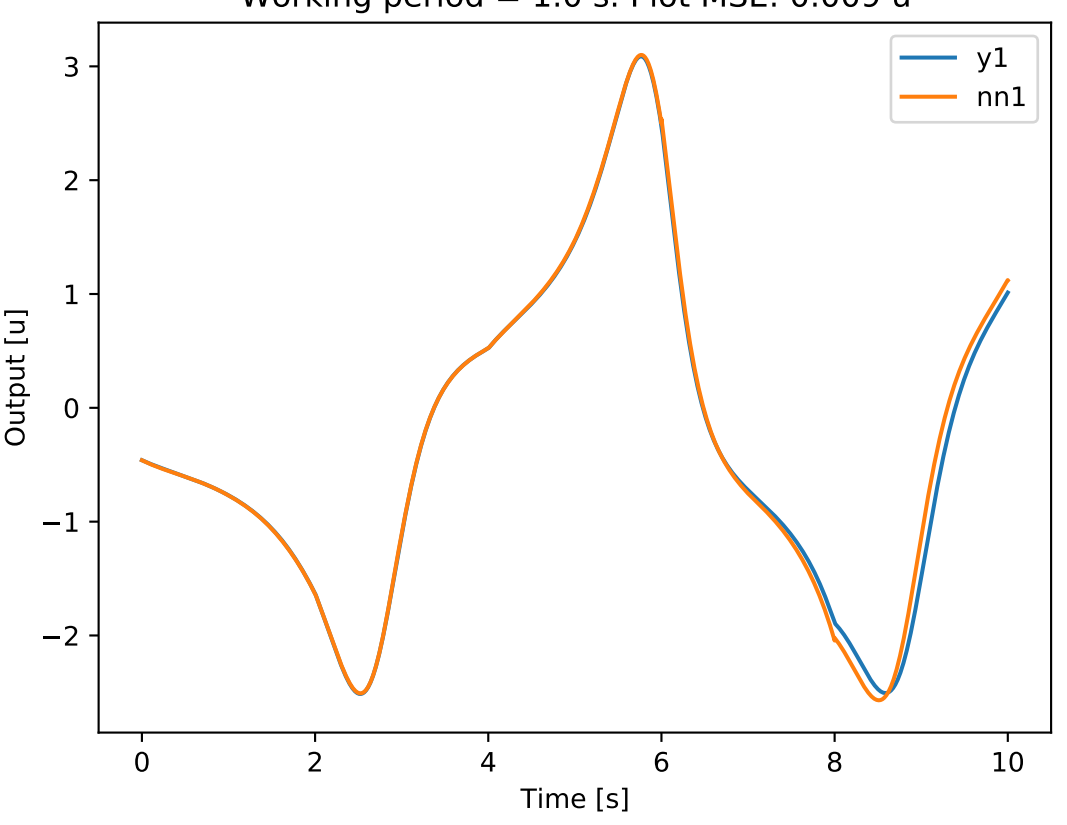

Train losses
u loss
f loss
10^{-3}
10^{-4}
10^{-5}
Loss [u²]
0
1
2
3
4
5
6
7
8
Working period [s]

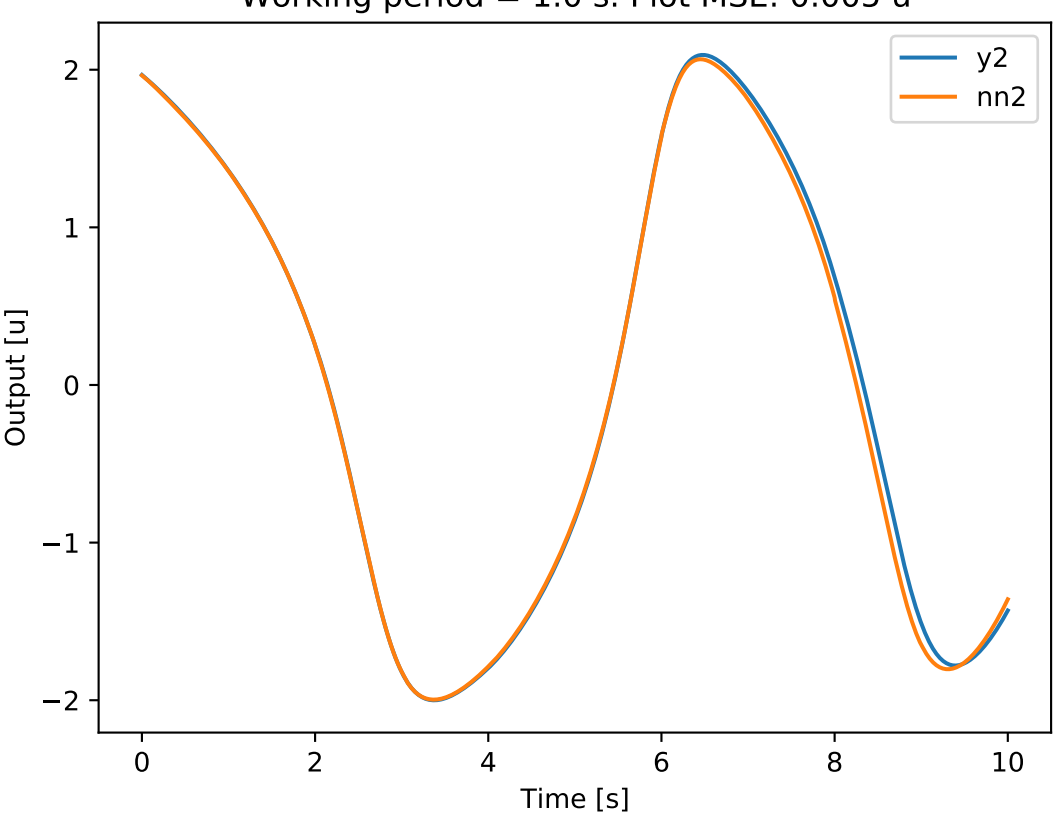

Working period = 0.01 s. Plot MSE: 3.671 u
y1
nn1
Output [u]
Time [s]
3
2
1
0
−1
−2
0
2
4
6
8
10

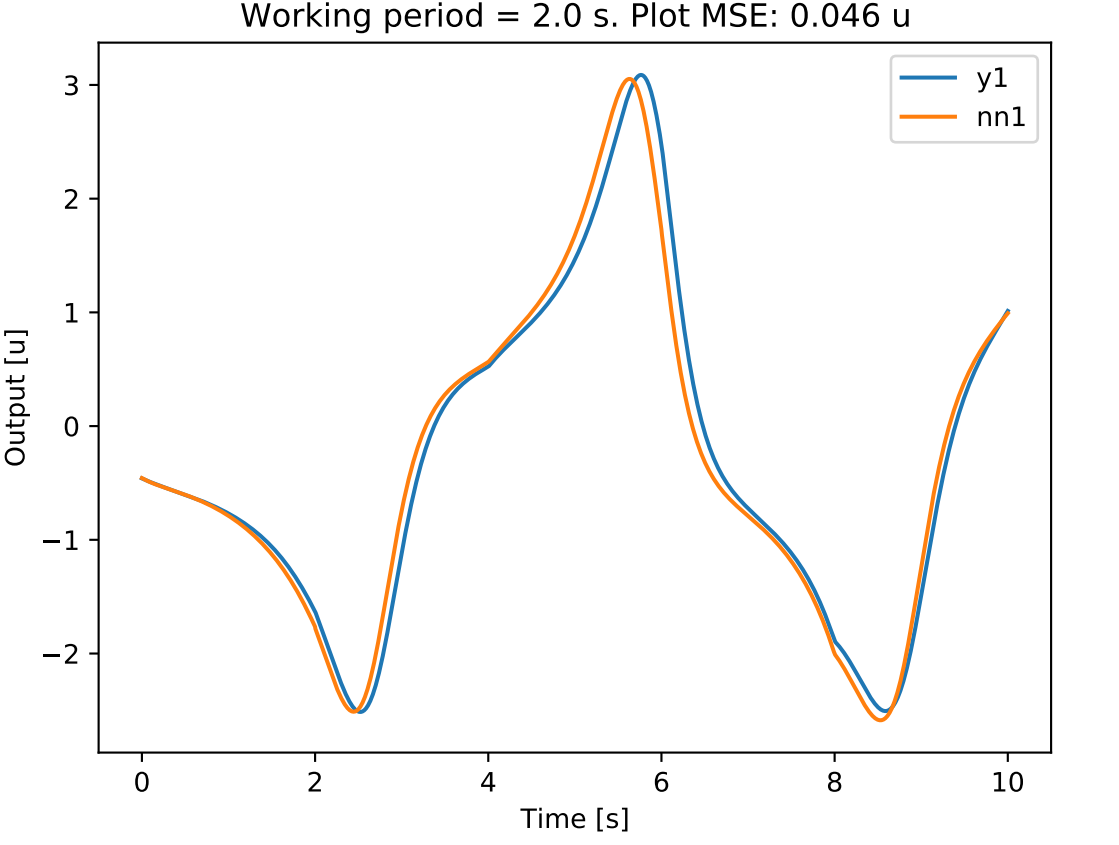

Working period = 0.01 s. Plot MSE: 4.853 u
y2
nn2
Output [u]
Time [s]
2
1
0
−1
−2
0
2
4
6
8
10

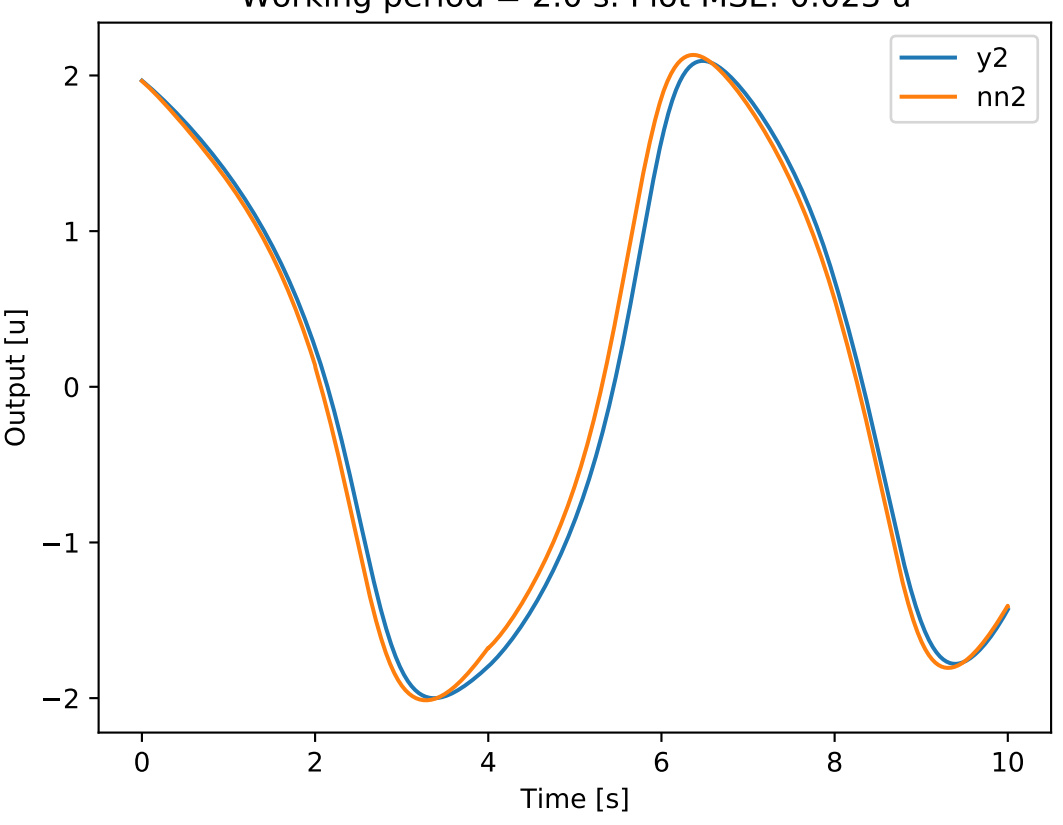

Working period = 0.1 s. Plot MSE: 0.022 u
y1
nn1
Output [u]
Time [s]
3
2
1
0
−1
−2
0
2
4
6
8
10

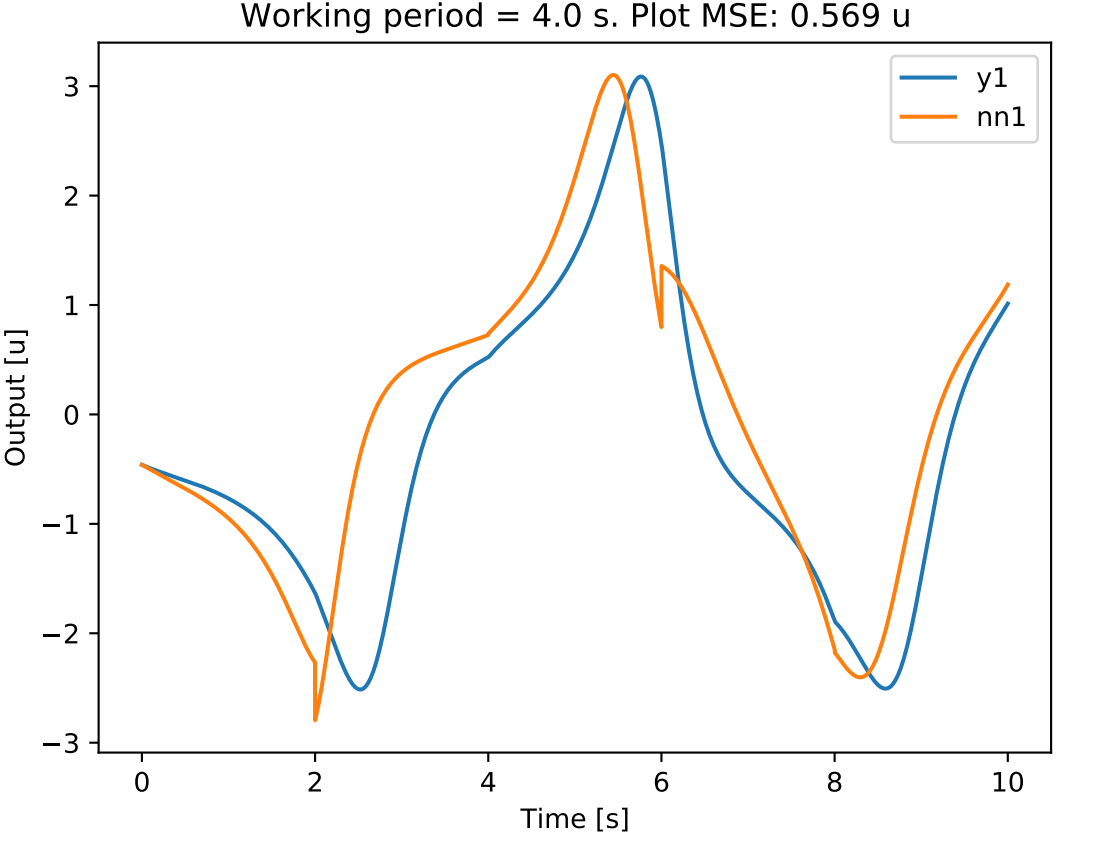

Working period = 0.1 s. Plot MSE: 0.012 u
y2
nn2
Output [u]
Time [s]
2
1
0
−1
−2
0
2
4
6
8
10

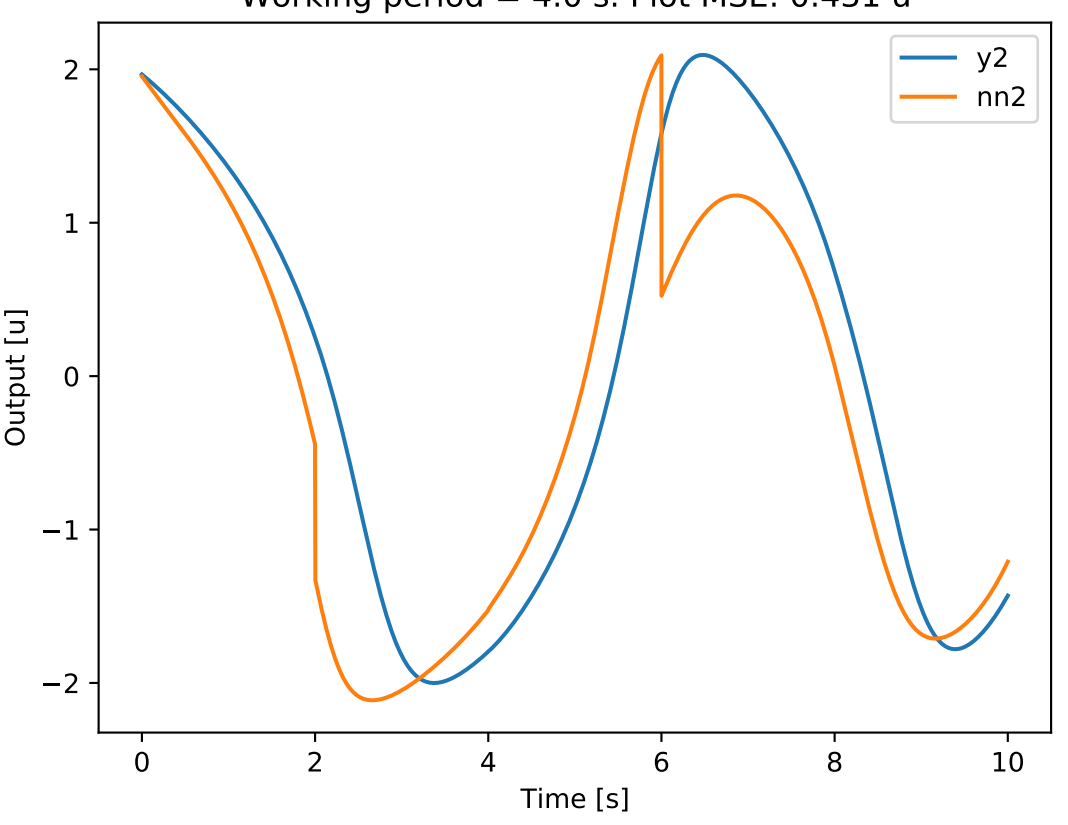

Working period = 1.0 s. Plot MSE: 0.009 u
y1
nn1
Output [u]
Time [s]
3
2
1
0
−1
−2
0
2
4
6
8
10

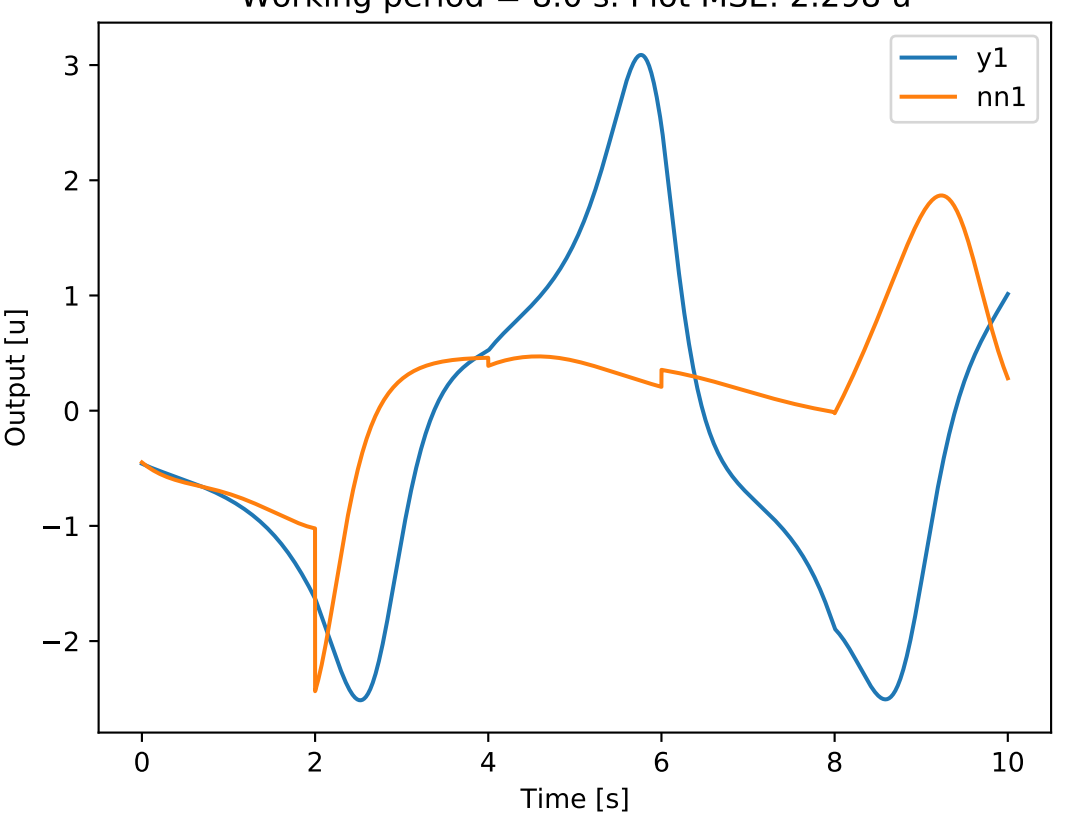

Working period = 1.0 s. Plot MSE: 0.005 u
y2
nn2
Output [u]
Time [s]
2
1
0
−1
−2
0
2
4
6
8
10

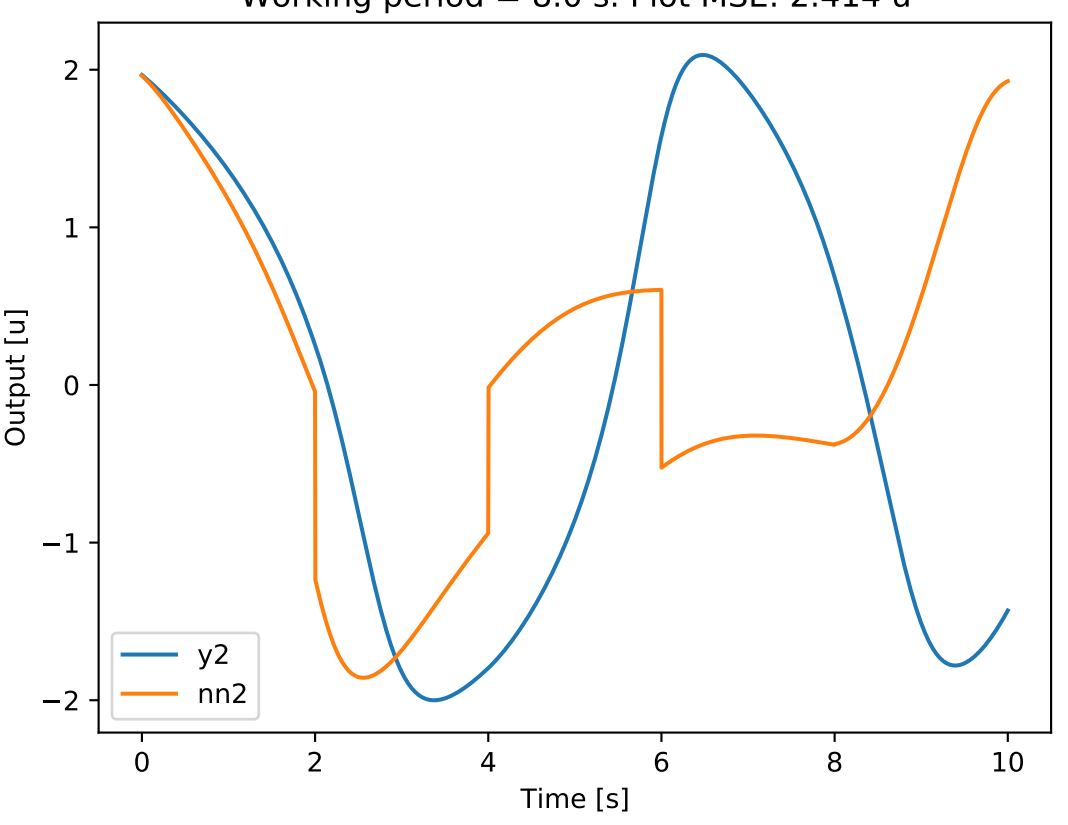

Working period = 2.0 s. Plot MSE: 0.046 u
y1
nn1
Output [u]
Time [s]
3
2
1
0
−1
−2
0
2
4
6
8
10


Working period = 2.0 s. Plot MSE: 0.023 u
y2
nn2
Output [u]
Time [s]
2
1
0
−1
−2
0
2
4
6
8
10


Working period = 4.0 s. Plot MSE: 0.569 u
y1
nn1
Output [u]
Time [s]
3
2
1
0
−1
−2
−3
0
2
4
6
8
10


Working period = 4.0 s. Plot MSE: 0.431 u
y2
nn2
Output [u]
Time [s]
2
1
0
−1
−2
0
2
4
6
8
10


Working period = 8.0 s. Plot MSE: 2.298 u
y1
nn1
Output [u]
Time [s]
3
2
1
0
−1
−2
0
2
4
6
8
10


Working period = 8.0 s. Plot MSE: 2.414 u
Output [u]
Time [s]
y2
nn2
2
1
0
−1
−2
0
2
4
6
8
10