

model	R2	MSE	R2 std	hidden sizes	total hs	epochs
Relu2HiddenLayer	90.6	0.08	9.9	[15, 10, 3]	28	50
Relu2HiddenLayer	86.3	0.12	6.4	[15, 10, 3]	28	200
Relu2HiddenLayer	85.8	0.12	4.9	[15, 10, 3]	28	100
Relu2HiddenLayer	84.3	0.14	10.5	[8, 4]	12	200
Relu2HiddenLayer	83.6	0.14	5.1	[15, 5]	20	200
Relu2HiddenLayer	81.7	0.16	11.5	[15, 5]	20	100
Relu2HiddenLayer	78.5	0.19	14.6	[8, 4]	12	20
Relu2HiddenLayer	77.2	0.2	15.2	[15, 10, 3]	28	20
Relu2HiddenLayer	73.6	0.23	29.8	[15, 5]	20	50
Relu2HiddenLayer	68.5	0.28	22.6	[15, 5]	20	20
Relu2HiddenLayer	67.9	0.28	34.1	[8, 4]	12	50
Relu2HiddenLayer	67.1	0.29	23.4	[8, 4]	12	100

Table 1: Results of different models

features	R2
flow_rate1, conc_nano1, Kfluid1, heat_flux1, X_D1, flow_rate2, conc_nano2, Kfluid2, heat_flux2, X_D2	82.69
conc_nano1, Kfluid1, heat_flux1, X_D1, flow_rate2, conc_nano2, Kfluid2, heat_flux2, X_D2	62.45
flow_rate1, Kfluid1, heat_flux1, X_D1, flow_rate2, conc_nano2, Kfluid2, heat_flux2, X_D2	81.63
flow_rate1, conc_nano1, heat_flux1, X_D1, flow_rate2, conc_nano2, Kfluid2, heat_flux2, X_D2	73.64
flow_rate1, conc_nano1, Kfluid1, X_D1, flow_rate2, conc_nano2, Kfluid2, heat_flux2, X_D2	72.94
flow_rate1, conc_nano1, Kfluid1, heat_flux1, flow_rate2, conc_nano2, Kfluid2, heat_flux2, X_D2	67.45
flow_rate1, conc_nano1, Kfluid1, heat_flux1, X_D1, conc_nano2, Kfluid2, heat_flux2, X_D2	68.03
flow_rate1, conc_nano1, Kfluid1, heat_flux1, X_D1, flow_rate2, Kfluid2, heat_flux2, X_D2	76.57
flow_rate1, conc_nano1, Kfluid1, heat_flux1, X_D1, flow_rate2, conc_nano2, heat_flux2, X_D2	38.28
flow_rate1, conc_nano1, Kfluid1, heat_flux1, X_D1, flow_rate2, conc_nano2, Kfluid2, X_D2	69.39
flow_rate1, conc_nano1, Kfluid1, heat_flux1, X_D1, flow_rate2, conc_nano2, Kfluid2, heat_flux2	81.61

Table 2: Results of Backward Feature Elimination

## 1 Results

### 1.1 Main Results

### 1.2 Backward Feature Selection

### 1.3 Forward Feature Selection

### 1.4 Weight Analysis

### 1.5 Jackknife Sensitivity Analysis