

System Identification and Analysis

This is the final project I did for the Linear Dynamic System class. It is related to a linear MIMO system with two inputs and two outputs. There are five main tasks:

Task #1: Model identification

Find A, B, C, D matrices based on the observed impulse response so that:

$$\begin{aligned}\mathbf{x}_{k+1} &= A\mathbf{x}_k + B\mathbf{u}_k \\ \mathbf{y}_k &= C\mathbf{x}_k\end{aligned}$$