Deadline 6/12 (submit PDF via PandA system)

1. Discuss the similarity and difference between Kalman filter and hidden Markov model (forward algorithm).
2. Explain how to estimate the coefficients a_1 and a_2 of the auto-regressive model (AR model)

$$y_t = a_1 y_{t-1} + a_2 y_{t-2} + \varepsilon_t$$

from observed sequence data $y_1, y_2, \ldots, y_T \in R$.

(optional)

3. Apply AR model estimation to any real data and evaluate short-term prediction.