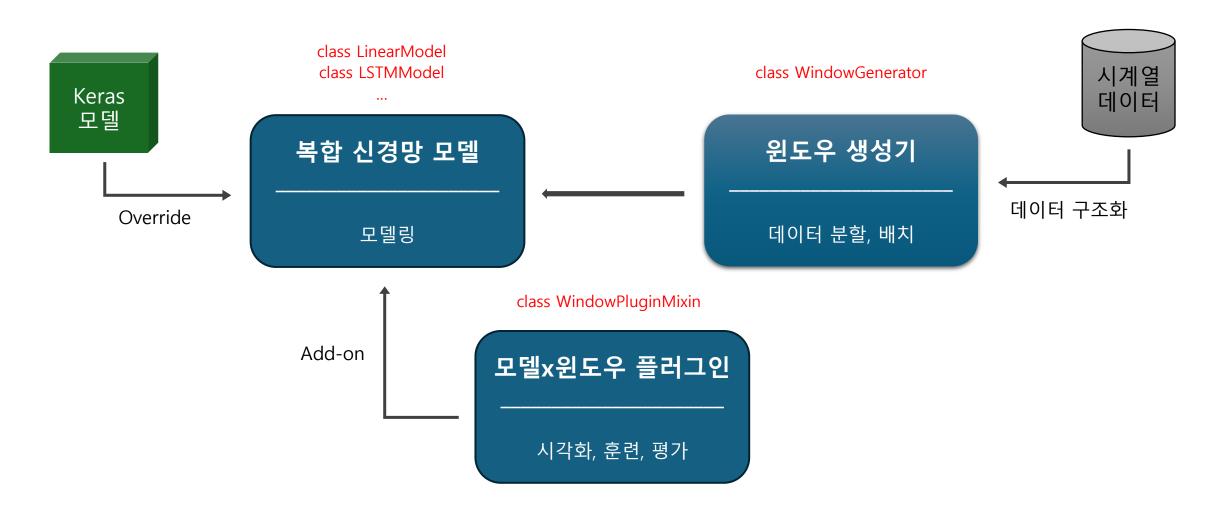
데이터 사이언스 실무

제 14강. 딥러닝 시계열 예측 모델링

곽지호

시계열 DL 엔지니어링 아키텍처



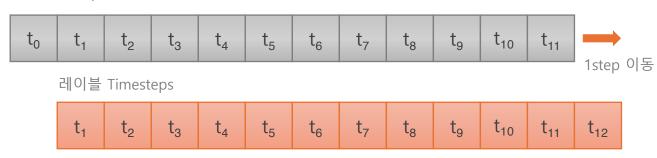
윈도우 생성 구조(1)

예시1. 1Step - 1Label - 1Shift 윈도우



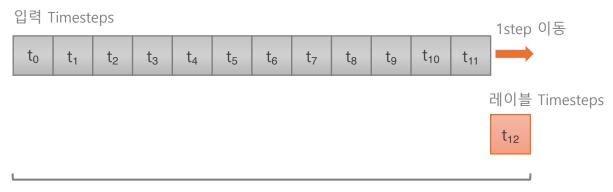
예시2. 12Step - 12Label - 1Shift 윈도우

입력 Timesteps



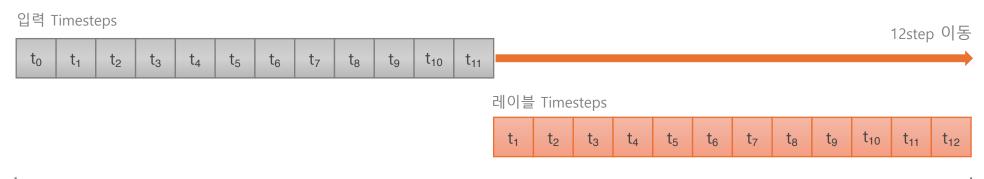
윈도우 생성 구조(2)

예시3. 12Step - 1Label - 1Shift 윈도우



Total Window Size = 13

예시4. 12Step - 12Label – 12Shift 윈도우



단일스텝 예측모델

필요 입력 윈도우 : N step - 1 Label - 1 Shift





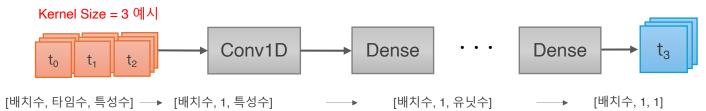
[배치수, 타임수, 특성수] → [배치수, 타임수, 유닛수] → [배치수, 1, 1]

컨볼루셔널 FC 모델

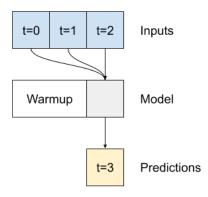


 $[배치수, 타임수, 특성수] \longrightarrow [배치수, 타임수 x 유닛수] \longrightarrow [배치수, 유닛수] \longrightarrow [배치수, 1] <math>\longrightarrow$ [배치수, 1, 1]

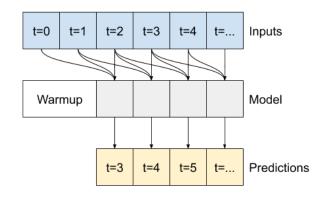
CNN 모델



<u> 컨볼루셔널 FC 모델</u>



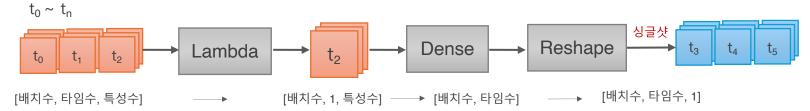
CNN 모델



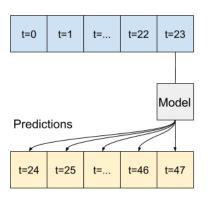
멀티스텝 예측모델

필요 입력 윈도우 : N step - M Label - M Shift



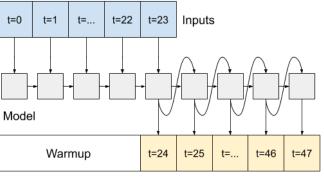


<u>싱글샷 선형 모델</u>



LSTM Feedback 모델 to t1 t2 LSTM cell Dense [배치수, 1, 1] \longrightarrow [배치수, 1, 1] [배치수, 1, 1] [배치수, 1, 1] [배치수, 1, 1] [배치수, 1, 1]

LSTM 피드백 모델



Predictions