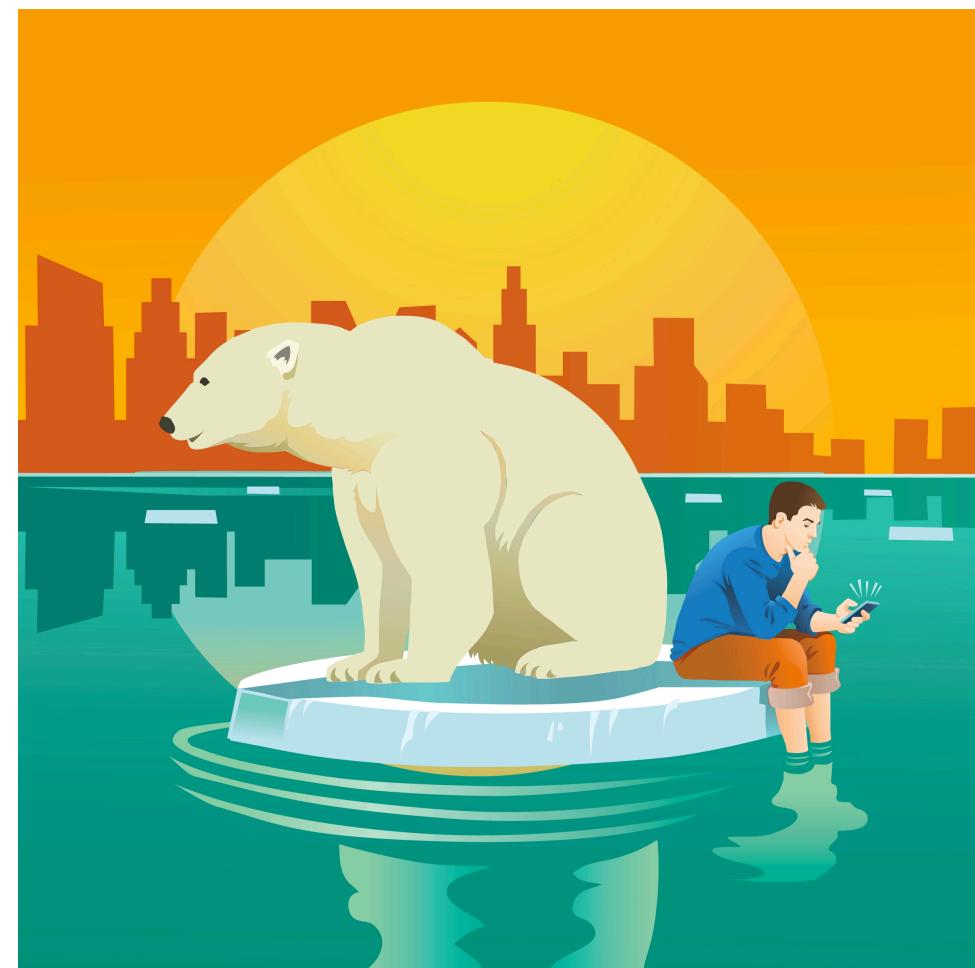


TDI Interview: Can deep learning help us solve climate crisis?

Jiancong (Nigel) Chen • UC Berkeley

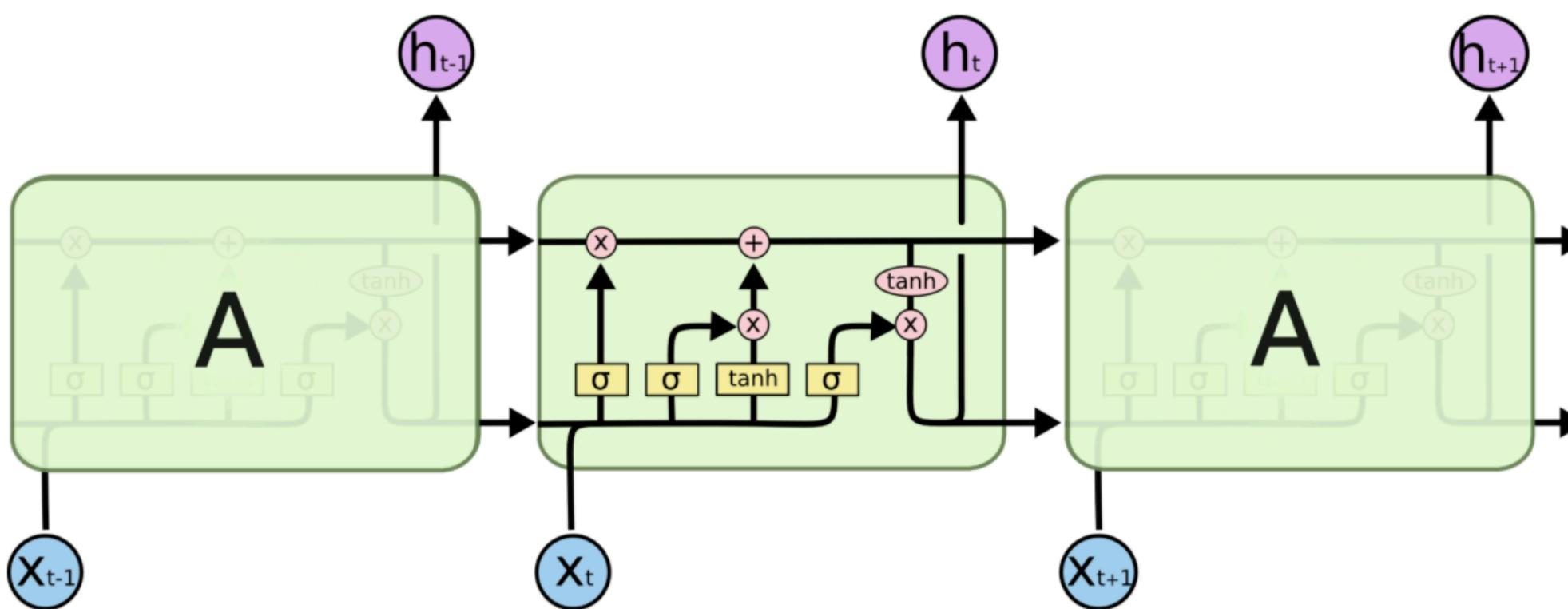
Why should we care?



Method

Long short-term memory recurrent neural network

- Unique cell state and three gated structures
- Capture long-term dependence
- Available in Keras/Pytorch



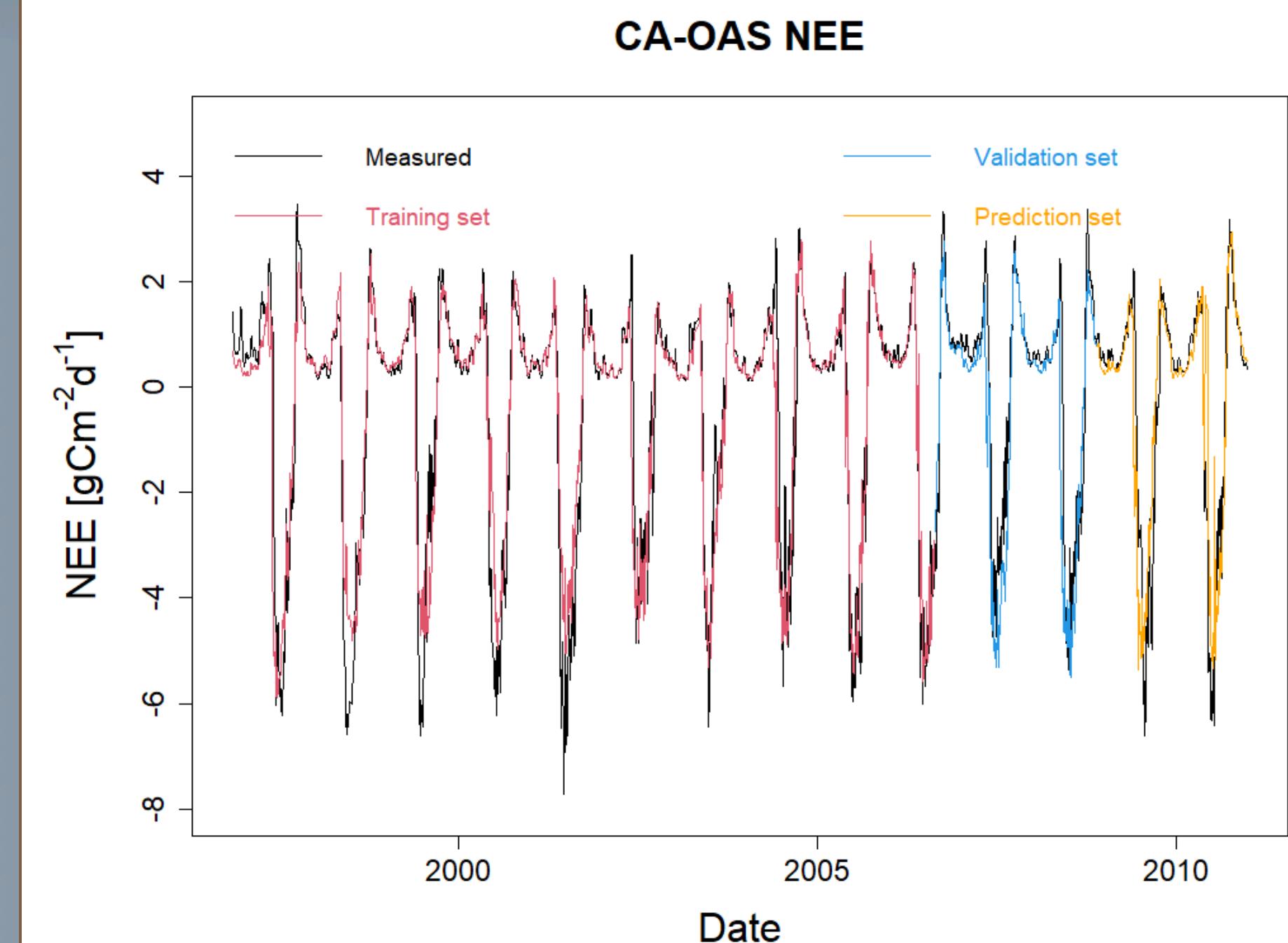
Configuration of LSTM layer (Olah 2015)

```
model <- keras_model_sequential()
model %>%
  layer_lstm(units = 50, return_sequences = TRUE, kernel_regularizer = regularizer_l2(l=0.001),
             input_shape = c(1, dim(xtrain)[2])) %>%
  layer_lstm(units = 25) %>%
  layer_dropout(rate = 0.1) %>%
  layer_dense(units = 8, kernel_regularizer = regularizer_l2(l=0.001)) %>%
  layer_dropout(rate = 0.1) %>%
  layer_dense(units = 1)
summary(model)
```

Sample Code Block

Deliverables

Water and carbon fluxes



Hot Spots and sensitive areas

