

# Sequence-to-Sequence Learning

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# Sequence-to-sequence learning

Translate



English Chinese Spanish Detect language ▾



Chinese (Traditional) English Spanish ▾

Translate

the spirit is willing but the flesh is weak ×

精神是願意，肉體卻很弱



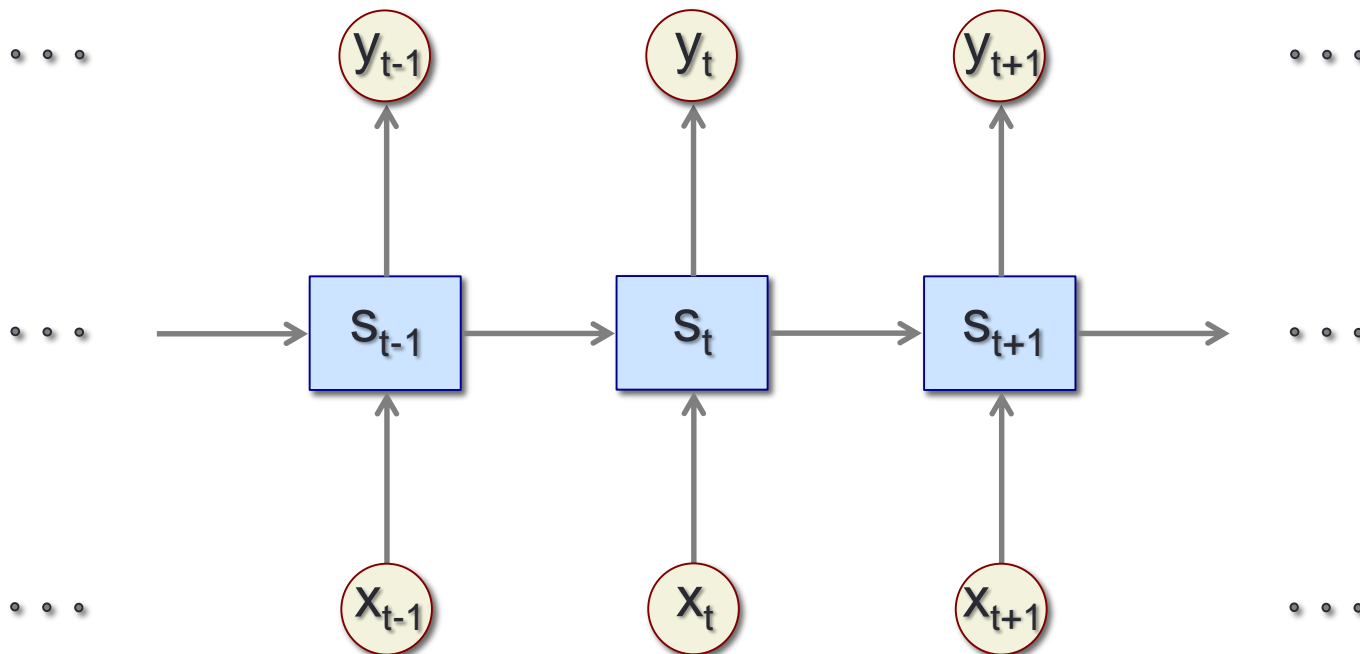
Wrong?

Jīngshén shì yuànyì, ròutǐ què hěn ruò

心有餘而力不足

# Sequence-to-sequence learning

output sequence



input sequence

# Some ongoing research projects

- Predicting student performance in massive open online courses (MOOCs)
- Predicting evolution of weather radar maps for precipitation nowcasting
- Visual object tracking
- Video super-resolution

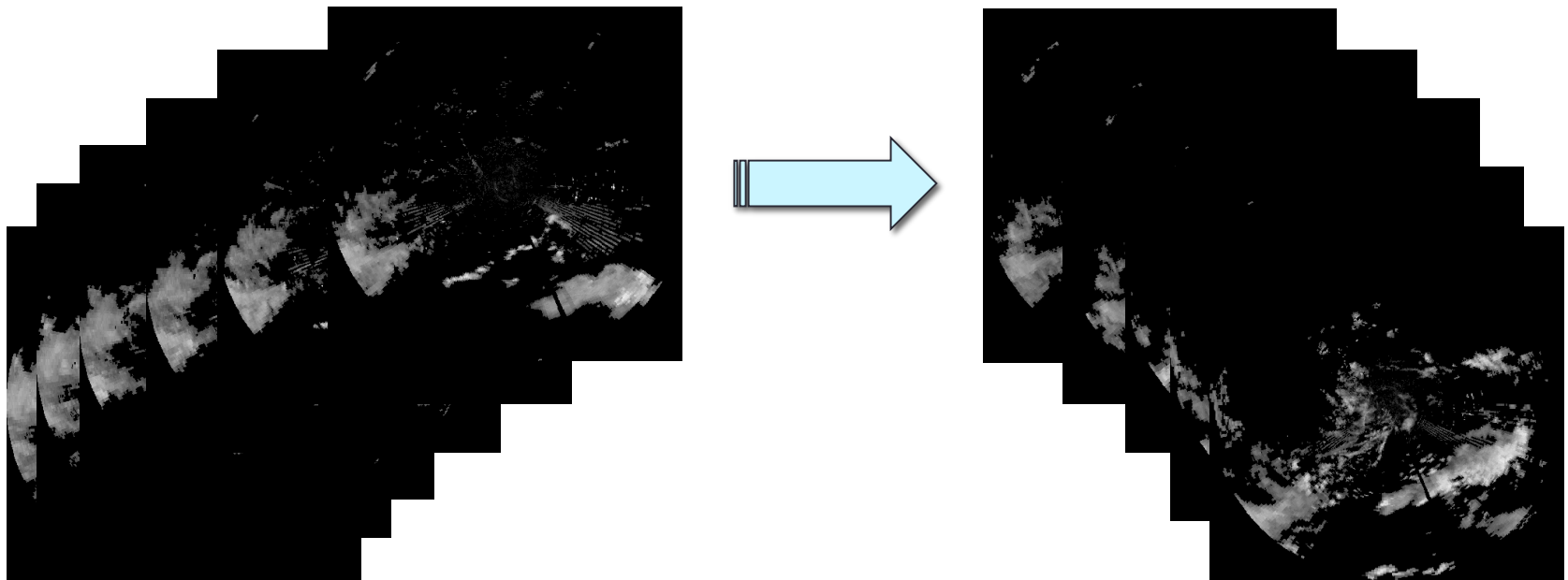
# Predicting student performance in MOOCs

- **Input sequence:** learning-related activities
- **Output sequence:** predicted performance indicators



# Predicting evolution of weather radar maps

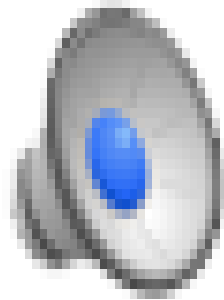
- **Input sequence:** radar maps up to current time step
- **Output sequence:** predicted radar maps for future time steps



X. Shi, Z. Chen, H. Wang, D.Y. Yeung, W.K. Wong, and W.C. Woo. Convolutional LSTM network: A machine learning approach for precipitation nowcasting. *NIPS 2015*.

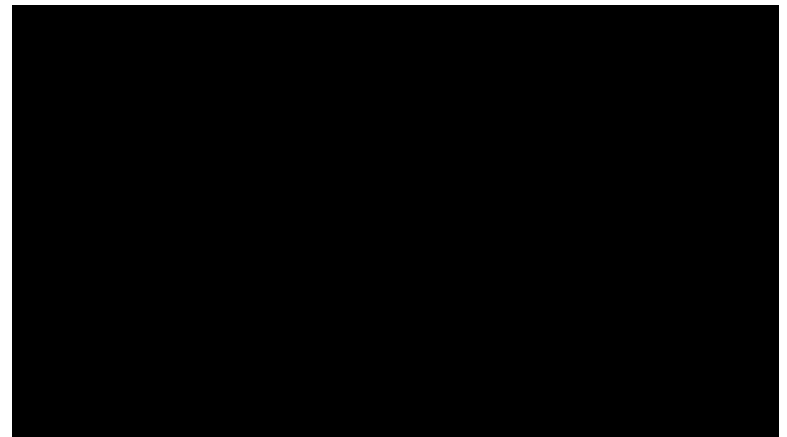
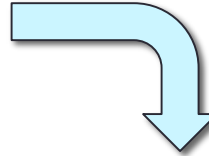
# Visual object tracking

- **Input sequence:** video frames containing moving target
- **Output sequence:** bounding boxes around target



# Video super-resolution

- **Input sequence:** low-resolution video frames
- **Output sequence:** high-resolution video frames







Thank  
You!