

Unobserved Future  
State Vector

$$X_{t+1}^i$$

Memory of State  
Vectors  
for a given agent  
“ i ”

$$X_{t-MT}^i, X_{t-MT-1}^i, \\ X_{t-MT-2}^i, \dots, X_t^i$$

Past State Vectors

$$X_1^i, X_2^i, \dots, \\ X_{t-MT+2}^i, X_{t-MT+1}^i$$

Current State  
Vectors of  
Neighboring  
Agents

$$X_t^i, X_t^j, \\ X_t^k, \dots, X_t^N$$

Encoded Time-Series  
of Agent “ i ”

Sequence  
LSTM  
Encoder

Encoded  
Context

Context  
LSTM  
Encoder

Concatenated  
Encodings

LSTM  
Decoder

Prediction

$$h = \widehat{X_{t+1}^i}$$

