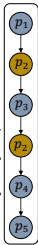
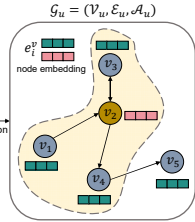
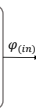
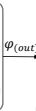
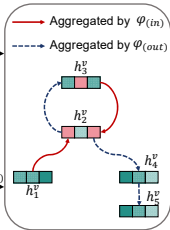


Trajectory Sequence of User  $u$ Graph  
Construction

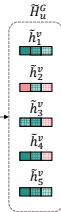
User-oriented POI Transition Graph

Graph  
Feature  
Encoder $G_\theta$ Ingoing  
MLP $\varphi_{(in)}$ Outgoing  
MLP $\varphi_{(out)}$ 

Bi-directional Message Passing



Graph attention layer

Node Feature  
Representation

Linear

Linear

Linear

Layer  
NormLayer  
NormLayer  
Norm $Q_h$  $K_h$  $V_h$ Multihead  
Attention $H_{Att}$  $\oplus$  $\oplus$ Point-wise  
feed forward  
network  
(PFFN)POI Sequence  
Encoding