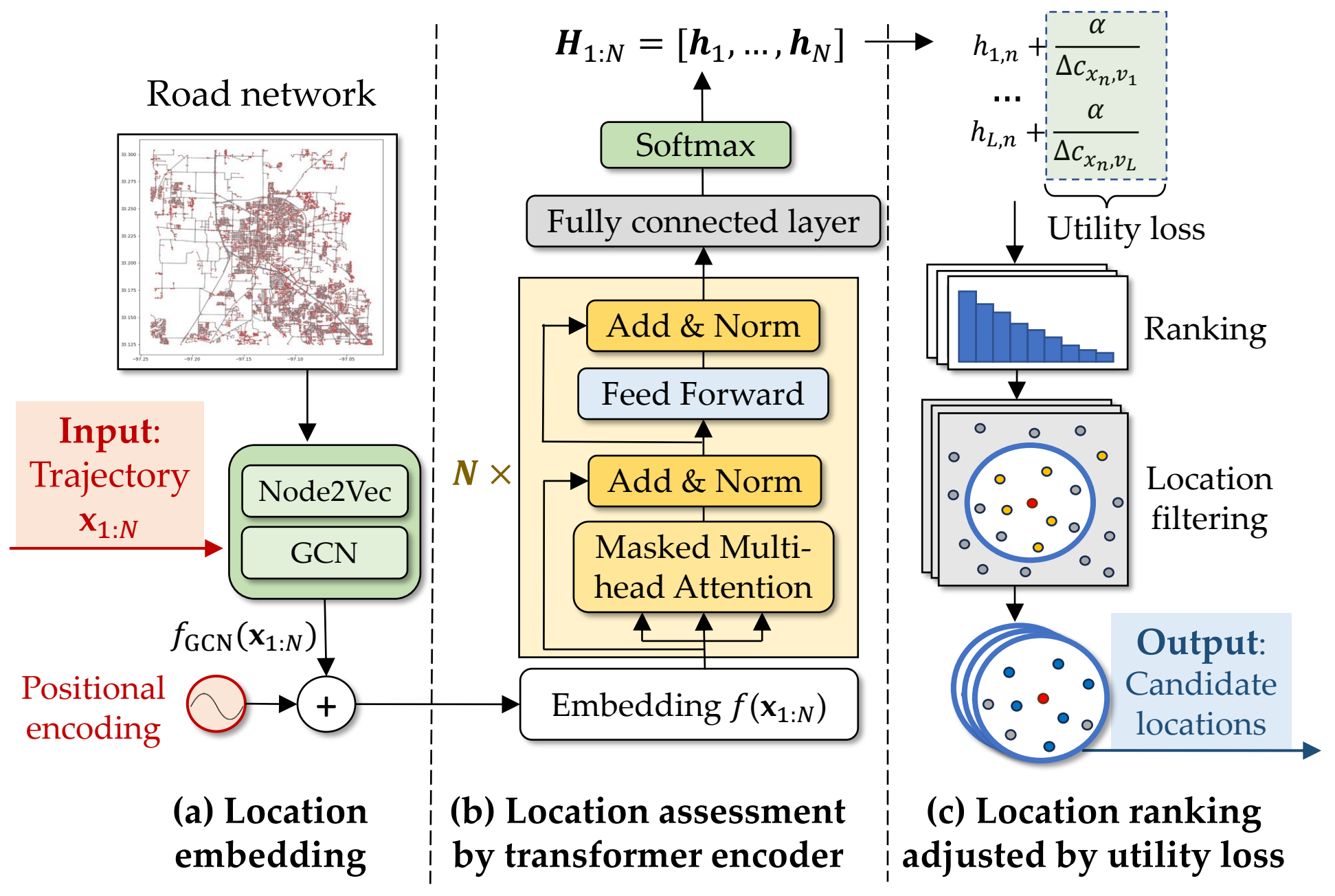
Road network
Input:
Trajectory
$\mathbf{x}_{1:N}$
Node2Vec
GCN
$f_{\mathrm{GCN}}(\mathbf{x}_{1:N})$
Positional encoding
+
(a) Location embedding
$\boldsymbol{H}_{1:N} = [\boldsymbol{h}_1, \ldots, \boldsymbol{h}_N]$
Softmax
Fully connected layer
$N \times$
Add & Norm
Feed Forward
Add & Norm
Masked Multi-head Attention
Embedding $f(\mathbf{x}_{1:N})$
(b) Location assessment by transformer encoder
$h_{1,n} + \frac{\alpha}{\Delta c_{x_n,v_1}}$
$\ldots$
$h_{L,n} + \frac{\alpha}{\Delta c_{x_n,v_L}}$
Utility loss
Ranking
Location filtering
Output:
Candidate locations
(c) Location ranking adjusted by utility loss