## Transformer

self.MHA\_layers self.linear1\_layers self.linear2\_layers self.norm1\_layers self.norm1\_layers self.norm2\_layers self.nb\_layers self.nb\_heads self.batchnorm

-init(self, nb\_layers, dim\_emb, nb\_heads, dim\_ff, batchnorm) -forward(self, h):

## HPN

self.city\_size =
self.batch\_size = 0
self.dim = n\_hidden
self.pointer = Attention(n\_hidden)
self.TransPointer = Attention(n\_hidden)
self.encoder = LSTM(n\_hidden)
h0 = torch.FloatTensor(n\_hidden)
c0 = torch.FloatTensor(n\_hidden)
self.h0 = nn.Parameter(h0)
self.c0 = nn.Parameter(c0)

r1 = torch.ones(1) r2 = torch.ones(1) r3 = torch.ones(1) self.r1 = nn.Parameter(r1) self.r2 = nn.Parameter(r2) self.r3 = nn.Parameter(r3)

self.embedding\_x = nn.Linear(n\_feature, n\_hidden)
self.embedding\_all1 = nn.Linear(n\_feature, n\_hidden)
self.embedding\_all2 = nn.Linear(n\_feature + 1, n\_hidden)
self.Transembedding\_all =
TransEncoderNet(6, 128, 8, 512, batchnorm=True)
self.start\_placeholder = nn.Parameter(torch.randn(n\_hidden))

self.W1 = nn.Linear(n\_hidden, n\_hidden) self.W2 = nn.Linear(n\_hidden, n\_hidden) self.W3 = nn.Linear(n\_hidden, n\_hidden) self.agg\_1 = nn.Linear(n\_hidden, n\_hidden) self.agg\_2 = nn.Linear(n\_hidden, n\_hidden) self.agg\_3 = nn.Linear(n\_hidden, n\_hidden)

\_\_init\_\_(self, n\_feature, n\_hidden): forward(self, Transcontext, x, X\_all, mask, h=None, c=None, latent=None):

## Attention

self.size = 0 self.batch\_size = 0 self.dim = n\_hidden v = torch.FloatTensor(n\_hidden) self.v = nn.Parameter(v) self.Wref = nn.Linear(n\_hidden, n\_hidden) self.Wq = nn.Linear(n\_hidden, n\_hidden)

init(self, n\_hidden):-forward(self, q, ref):

## **LSTM**

# parameters for input gate self.Wxi = nn.Linear(n hidden,n hidden) # W(xt) self.Whi = nn.Linear(n hidden, n hidden) # W(ht) self.wci = nn.Linear(n hidden, n hidden) # w(ct) # parameters for forget gate self.Wxf = nn.Linear(n hidden, n hidden) # W(xt) self.Whf = nn.Linear(n hidden, n hidden) # W(ht) self.wcf = nn.Linear(n hidden, n hidden) # w(ct) # parameters for cell gate self.Wxc = nn.Linear(n hidden, n hidden) # W(xt) self.Whc = nn.Linear(n hidden, n hidden) # W(ht) # parameters for forget gate self.Wxo = nn.Linear(n hidden, n hidden) # W(xt) self.Who = nn.Linear(n hidden, n hidden) # W(ht) self.wco = nn.Linear(n hidden, n hidden) # w(ct)

<sup>-</sup> \_\_init\_\_(self, n\_hidden)

<sup>-</sup> forward(self, x, h, c):

