| preventer | investigators | transporter | / | Destination | / |
| origin | / | PassengerArtifact | / | vehicle | car |

Co-occurrences-aware Module

CsEAE

H_D

Decoder
Cross-attention
Self-attention

Span Selector

Decoder
Cross-attention
Self-attention

P_{en}
prompt start ... Destination Place ...end

Encoder
Self-attention

D
... officials <t-0> said </t-0> that investigators <t--1> stopped </t--1> a ... bombing <t-2> Investigation </t-2> ...

FFN Dropout Tanh FFN Dropout Tanh FFN

Softmax
MatMul
Q K V

Decoder
Encoder

P_e
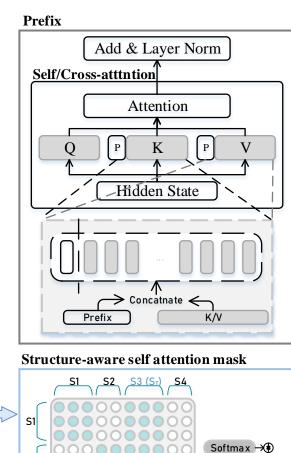prompt start, ... about Topic (and Topic) ... ,end prompt start, ... from Origin Place (and Origin Place) to transport ... ,end prompt start, ... for Crime (and Crime) ... ,end

Structure-aware Module

Concatnate
Prefix   K/V

FFN Dropout Tanh FFN Dropout Tanh FFN

Softmax
MatMul
Q K V

Decoder
Encoder

D
[1]...[2]...[3] Late Sunday night, two law enforcement ... officials <t-0> said </t-0> that investigators <t--1> stopped </t--1> a ... bombing <t-2> Investigation </t-2> ... [4] ...

Prefix

Add & Layer Norm

Self/Cross-atttntion

Attention

Q P K P V

Hidden State

Concatnate
Prefix   K/V

Structure-aware self attention mask

S1 S2 S3 (S₁) S4

S1
S2
S3 (Sᵀ)
S4

Softmax
MatMul
Q k V