

Graph Branch

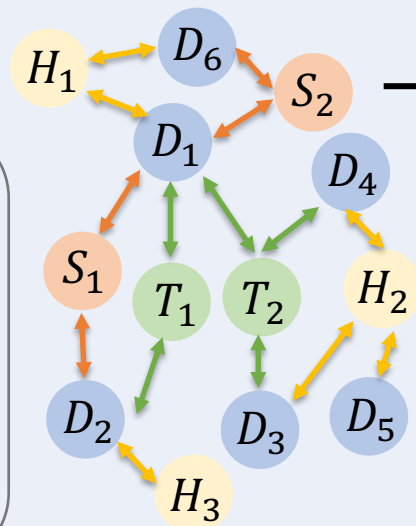
Knowledge Graph Construction (Figure 2)

Edge \longleftrightarrow has - indicates
 \longleftrightarrow suggests - administers
 \longleftrightarrow parent - children

Node $\dots \rightarrow$ D Diagnosis Code
 S Symptom
 T Treatment
 H Hierarchy

Pretrained BERT

Embedding Initialization

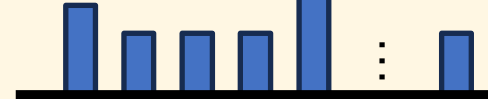


Heterogeneous Graph Transformer

Updated Diagnosis Embeddings

D_1^*
 D_2^*
 \dots
 D_L^*

Diagnosis code
Probability Distribution



Pooling + Linear
Classification

Text Branch

Electronic Patient Record

Patient ID	2023_01
Age	23
Gender	F
Narrative	a female patient sitting on couch, fully clothed, no bleeding, SOB...
Diagnosis	protocol airway – failed

Text Preprocessing
(punctuation and
stopword removal)

Long Document Encoder

E_{Doc}

female
patient
 \dots
bleeding
sob

Heterogeneous Label-wise Attention

Linear

Tanh

Product

Softmax