

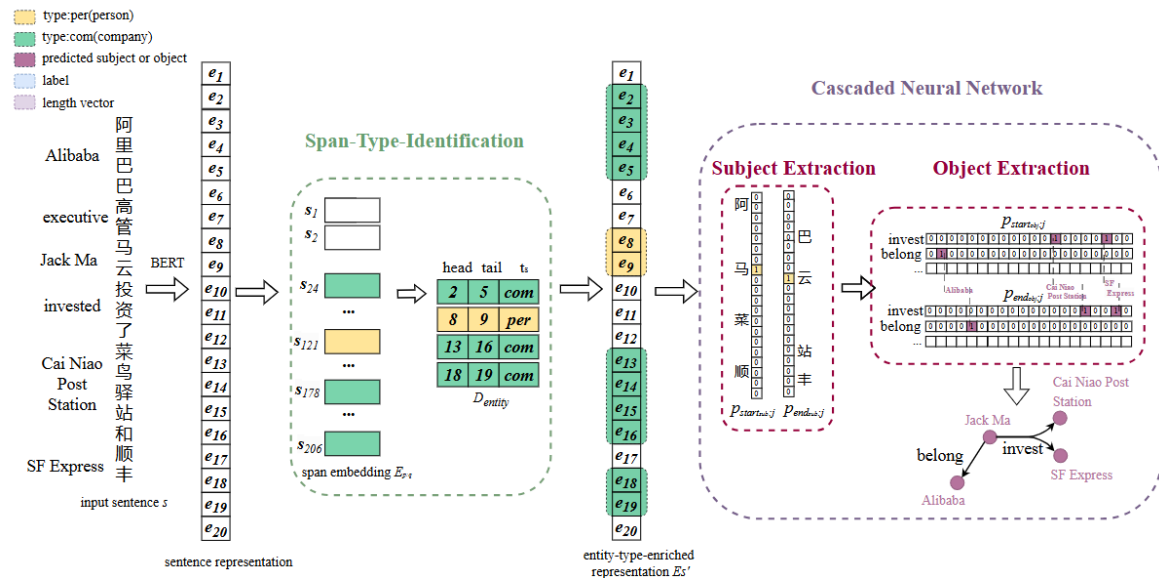
E²CNN: Entity-Type-Enriched Cascaded Neural Network for Chinese Financial Relation Extraction

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Problems & Ideas

- Challenges of Chinese Financial Relation Extraction:
 - The presence of the same entity appearing in multiple relations within a single sentence
 - the relation types in the Chinese financial corpus exhibit a strong correlation with the entity types
- Ideas: entity-type-enriched cascaded neural network (E²CNN) that considers the overlap triple problem and entity-type information.



An overview of our E²CNN model (1) The Span-Type-Identification module identifies the entities and corresponding types and obtains entity-enriched representations (2) In the cascaded neural network module, the subject extraction module predicts both the beginning and end position of the subject, object extraction detects all objects corresponding to the subjects obtained by the subject extraction under each predefined relation.

Main Contributions

- Contributions:
 - A novel entity-type-enriched cascaded neural network (E²CNN) that considers the overlap triple problem and entity-type information to construct a Chinese financial knowledge graph. ;
 - A Chinese financial dataset (termed FinCorpus.CN) based on a collection of Chinese financial company annual reports.;
 - Comprehensive experiments on the publicly available dataset DUIE and our newly established FinCorpus.CN.

Datasets	DUIE			FINCORPUS.CN		
Metrics	P(%)	R(%)	F1(%)	P(%)	R(%)	F1(%)
CasRel [16]	79.15	73.14	76.03	56.69	50.96	53.67
Dygie++ [25]	77.97	56.13	65.27	53.62	37.45	44.09
PL-Marker [26]	79.48	59.67	68.17	52.21	44.46	48.02
BIRTE [27]	79.77	68.03	73.43	49.59	53.98	51.69
OD-TRE [28]	79.01	69.92	74.19	53.12	54.10	53.61
E ² CNN (Ours)	96.16	95.31	95.73	86.59	78.53	82.36

Comparison of experimental results of relation extraction on DUIE and FinCorpus.CN