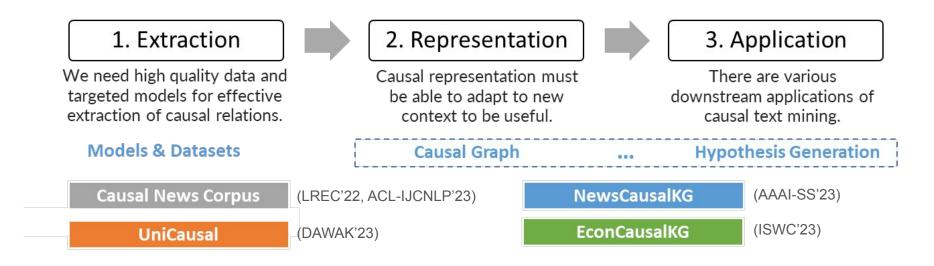
## Fiona Anting Tan

To Know the Causes of Things: Text Mining for Causal Relations



## Text mining for causal relations helps to uncover real world causal relationships.

We approach causal text mining through three broad steps:



## Fiona Anting Tan: "Text Mining for Causal Relations"

Constructing and Using Causal Knowledge Graphs

In News

Extraction Clustering & Representation Cluster & Get Topics Pattern-based Causal Datastore Remove Cluster Args **Causal Noun Pairs** Causal Pattern Relations Embeddings into Topics of Aras number → demand 'Ifcause11/N\t- number → display nsubi\tresult/VB\t Input Sentence Cause number → systems +nmod:in\t[[effect]]/N Ara vehicles → demand Thus, the vehicles → display arowina number the growing vehicles → systems of electric number of vehicles will electric vehicles result in an increased **BERT-based** demand for Knowledge Effect automotive Causal Sequence Datastore of KG Causal Cause Arg Effect Arg Subgraph Graph Arg Classification smart display Keywords Keywords retrieval of systems. Target Node What causes an increased Cause-Effect Span Detection growing r of EVs? demand for electric. sensors. automotive systems, mobility. What causes Thus <ARG0>, the growing number of electric increased deman for smart display smart display electronic. vehicles vehicles</ARG0> will result in <ARG1>an systems electronics. erative. increased demand for automotive smart display increase components happen next, a result? systems .</ARG1>

In Academic Literature

