

*Behavioral Content:*  
*Text Corpus (news, tweets, papers...)*

... prime minister of Canada Justin Trudeau and his wife Sophie arrive ...  
... Justin Trudeau, 43, told reporters ...

*Data-Driven Text Mining*

*Quality phrase mining*

prime\_minister, canada,  
justin\_trudeau, sophie, told\_reporters

*Entity recognition and fine-grained typing*

canada : \$LOCATION.COUNTRY sophie : \$PERSON  
justin\_trudeau : \$PERSON.POLITICIAN.PRIMEMINISTER

*Mining Meta Patterns*

prime\_minister of \$COUNTRY \$PRIMEMINISTER  
\$PERSON and his wife \$PERSON  
\$PERSON , \$DIGIT ,

*Facts (entity, attribute name, attribute value)*

(Canada, {prime\_minister, PM}, Justin Trudeau)  
(Justin Trudeau, {wife}, Sophie)  
(Justin Trudeau, {age, -year-old}, 43)

*Attributed Heterogeneous Information Network*

\$LOCATION.COUNTRY

Canada

\$PERSON.POLITICIAN.PRIMEMINISTER

Justin Trudeau  
age: 43

\$PERSON

Sophie

prime\_minister

wife