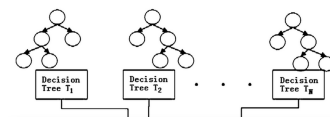


Clinical
Notes

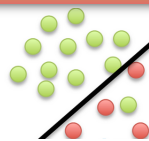
Medi-span,
Drugbank

EMR

Prior knowledge



Random Forest Classifier



Predicted

Filtered

Supported

- Remove known drug usages
- Positive supports (≥ 2) from FAERS
- Positive supports (≥ 2) from Medline

- Positive Supports from ADEs in Medi-Span up to 2012
- Positive Supports from ADEs in Medi-Span 2012~2015
- Positive Supports from Standard Reference

Example Features:
Co-mention Features
Temporal Features

Example Features:
Similarity with existing AEs

EMR

Prior knowledge

240 predicted ADEs after filtering

87 supported ADEs

Drug	Adverse Event
<i>ibuprofen</i>	<i>pruritus</i>
<i>metoclopramide</i>	<i>depression, neurotic</i>
<i>rofecoxib</i>	<i>heart diseases</i>
<i>clonazepam</i>	<i>depression, neurotic</i>
<i>cyclophosphamide</i>	<i>pruritus</i>
<i>clozapine</i>	<i>epilepsy</i>
....
....

Drug	Adverse Event
<i>levofloxacin</i>	<i>pruritus</i>
<i>capecitabine</i>	<i>angina pectoris</i>
<i>phenytoin</i>	<i>heart diseases</i>
<i>acetaminophen</i>	<i>seizures</i>
<i>chlorpromazine</i>	<i>epilepsy</i>
<i>codeine</i>	<i>pruritus</i>
....
....

2.3 million drug disorder pairs