## Unsupervised Approach for Shallow Domain Ontology Construction

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## 1. MOTIVATION

- Domain Ontology incorporates domain awareness in an IR system in the form of domain-specific concepts and relations
- > We propose a framework for its automatic creation without any form of supervision or manual annotation
- It improves performance of an existing Question-Answering system by 7%, as it becomes aware of the domain
- This shallow domain ontology focuses on 4 primary relations : Synonym, Type-Of, Feature-Of and Action-On

## 2. SMARTPHONE DOMAIN ONTOLOGY device Type-Of Type-Of wi-fimobilephone hotspot hotspot Type-Of Type-Of blackberry- samsung motorolahtc-evo-4g bold-9930 admiral Synonym Action-On Synonym Feature-Of samsung-galaxyconnect, use battery, airplanetab, htc-evo-shiftreplenish, call mode, bluetooth, 4g, samsungprogram, lock, galaxy-s-iii, htcapplication-data, remove, plug evo-4g, motorola text-messaging

## 4. EVALUATION RESULTS

- >5000 articles from smartphone domain, 2000 manually annotated word-pairs
- WordNet could only discover 1 word-pair for Feature-Of and 74 word-pairs for Type-O.
- WordNet does not contain any Action-On reln. Type
- 18% recall improvement over WordNet

Relation	Our Approach	
	Precision	Recall
Feature-Of	74.9%	85.7%
Action-On	63.88%	68%
Type-Of	57%	77%

F-Score Synonyms
0.22
0.31
0.42
0.42
0.43
0.43
0.45
0.49





