

Distant Supervision for Temporal Resolution

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Introduction

Problem

- Learn to resolve time-expressions directly from data
- Create a robust date resolvers by scaling up to learning from massive datasets through distant supervision

Motivation

- Make temporal resolution domain independent
- learn abbreviations and other phenomenon from unstructured text

Assumption

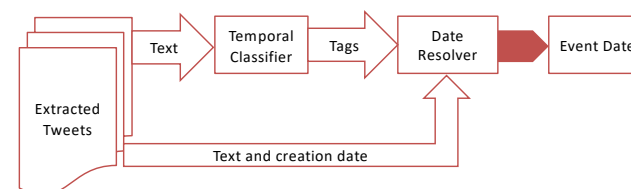
- Tweets mentioning an event will often contain temporal expressions referring to the event's date

Contribution

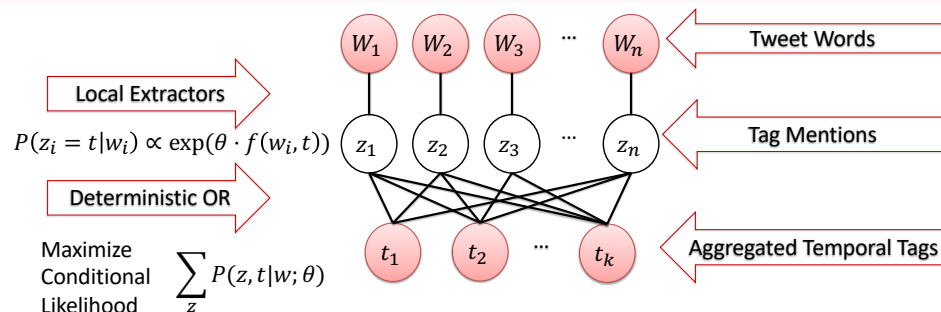
- Proposed a novel weakly supervised approach for extracting calendar dates from text
- Proposed a Multiple Instance Learning Algorithm for Tagging.

System Overview

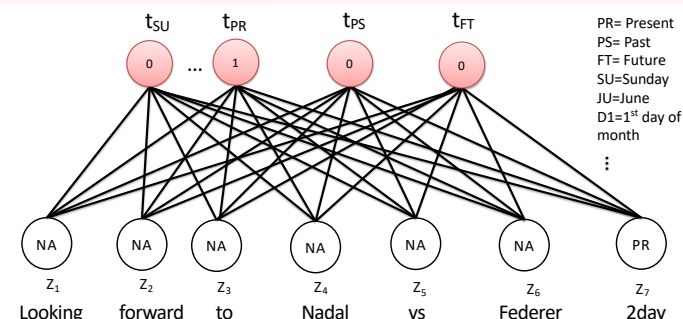
- Extract the tweets that are written near the time of an important event
- Orthographic and contextual features of selected tweets are extracted which are used as the input to the temporal classifier
- Using a conditionally trained latent variable model of distant supervision, the temporal Classifier extracts the word level tags
- Finally the tweeted event's calendar date is resolved using the extracted temporal tags, creation date and text in the tweet



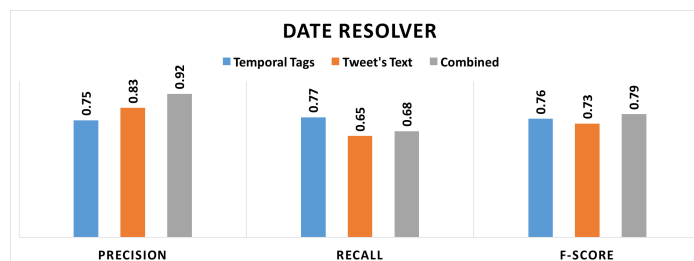
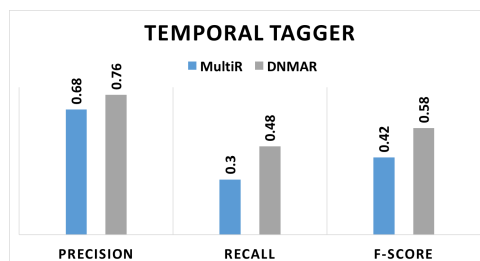
Multiple Instance Learning for Tagging



Word-level Temporal Tag Extraction from Sentence-level labels



Experimental Results



Future Work

- Compare the performance against some baseline
- Apply the proposed system over a human-annotated corpus and evaluate its performance

References

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