Overview

- **Predicate argument structure analysis** is a task of identifying structured events
- Need to identify a salient entity, which can be identified by performing coreference resolution (CR) and predicate argument structure analysis (PA) jointly
- Our work is inspired by [Wiseman+ 16], an English CR system which uses embeddings for an entity
  - Each entity is assigned an embedding, and is updated dynamically
  - The analyses take the entity embedding into consideration to access global information of entities

Contribution

- Use entity embeddings for Japanese PA
- Improve drastically inter-sentential zero anaphora resolution performance

Base Model

- The contextual representations of basic phrases are obtained by using CNNs and Bi-LSTMs
- From the beginning of an input text
  - Perform CR if a target phrase is a noun phrase
  - Perform PA if a target phrase is a predicate phrase

Entity-Centric Model

- Each entity is assigned an embedding, and is managed in an **entity buffer**
- When the result of both analyses refers to an entity, the entity embedding is updated by LSTM
- The analyses take the entity embedding into consideration

Experimental Results

- Evaluation sets:
  1. Kyoto University Web Document Leads Corpus (Web)
  2. Kyoto Corpus (News)

Future Work

- Global modeling using reinforcement learning
- Bridging reference resolution