

## Part E: conclusion and discussions

---

# Topics in this talk

- Dependency parsing and supervised approaches
  - Single model
    - Graph-based; Transition-based; Easy-first; Constituent-based
  - Hybrid model
  - Non-projective dependency parsing

# Topics in this talk

- Semi-supervised approaches for in-domain text
  - Whole tree level
  - Partial tree level
  - Lexical level

# Topics in this talk

- Approaches for parsing out-domain text
  - Shared tasks for parsing domain adaptation
  - Parsing canonical out-domain text
  - Parsing non-canonical out-domain text (web data)
    - Text normalization is important
- Multilingual dependency parsing

# Discussions

- Supervised track
  - Faster decoding algorithm for higher-order graph-based models
  - Broader search space for transition-based models
  - Theoretical and empirical comparison of dependency and phrase-structure parsers
    - Results indicate that the phrase-structure parsers can produce better syntactic structures than dependency parsers.

# Discussions

- Semi-supervised track
  - The approaches of Lexical or partial tree levels work well in exploring unannotated data
  - The approaches of whole-tree level are not effective
    - Exception: ambiguity-aware ensemble training
  - More effective semi-supervised approaches
    - How to select reliable sentences/fragments?
    - Sentence > **fragment** > subtree > word

# Discussions

- Parser domain adaptation
  - How to capture the domain differences, and then improve the models for the target domain?
  - How to find and extract features from unlabeled data which are helpful for target domain parsing?
- Parsing the web
  - Text normalization resources and procedures

# Discussions

- Multilingual dependency parsing
  - Word alignment errors (probabilities)
  - Source-language parsing errors (probabilities)
  - How to capture cross-language non-isomorphism
  - Joint word alignment and bilingual parsing?



# The End

- Thanks a lot.
- Q & A