A similar technique is almost impossible to apply to other crops, such as cotton, soybeans and rice.

Preprocessing

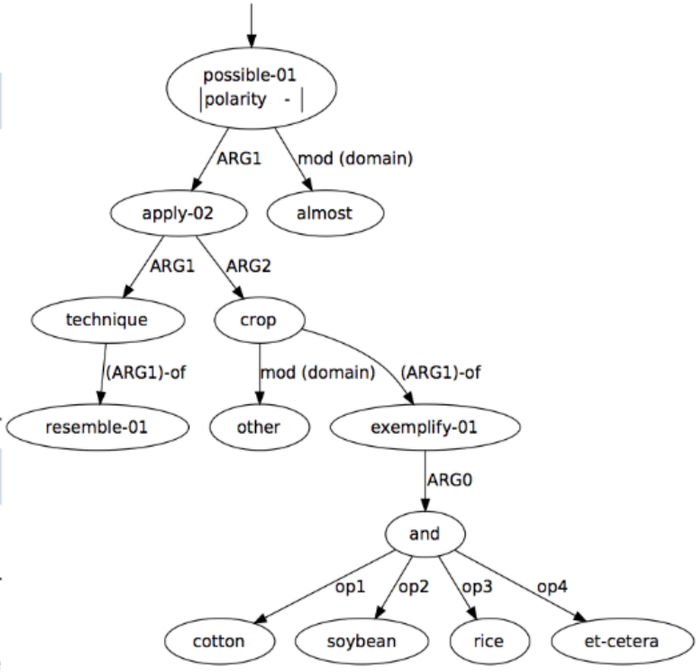
Tokenizing, Lemmatizing, MWE Labeling, NER Labeling

Any Sequence Encoder with Any Embedding

Node Identification With decomposed label tuple

Lemma Classifier (with copy) | Category Classifier (with copy) | POS Classifier | Sense Classifier

... (NEG, possible, 02, N/A) <possible-02 :polarity -> ... (frame, apply, 02, N/A) <apply-02> ... (mwe, exemplify, 02, N/A) <exemplify-02>



Two Separate Encoders for Head and Dep Node(with bi-lexicon) Encoding

Edge Identification Multiple Pass Biaffine Attention[1]

<possible-02, apply-02>
...
<apply-02, possible-02>
<emplify-02, possible-02>
<possible-02, emplify-02>

n * n

Deep Biaffine Classifier

n, n, r

$E \in \mathbb{R}^{n*n*r}$

Root Identification

Root Encoder with MLP(with anchoring word)

$R \in \mathbb{R}^{n}$

MCSG(greedy) Connectivity

From root node, greedily select edges until all nodes are connected, force connecting some wrongly predicted NULL edge