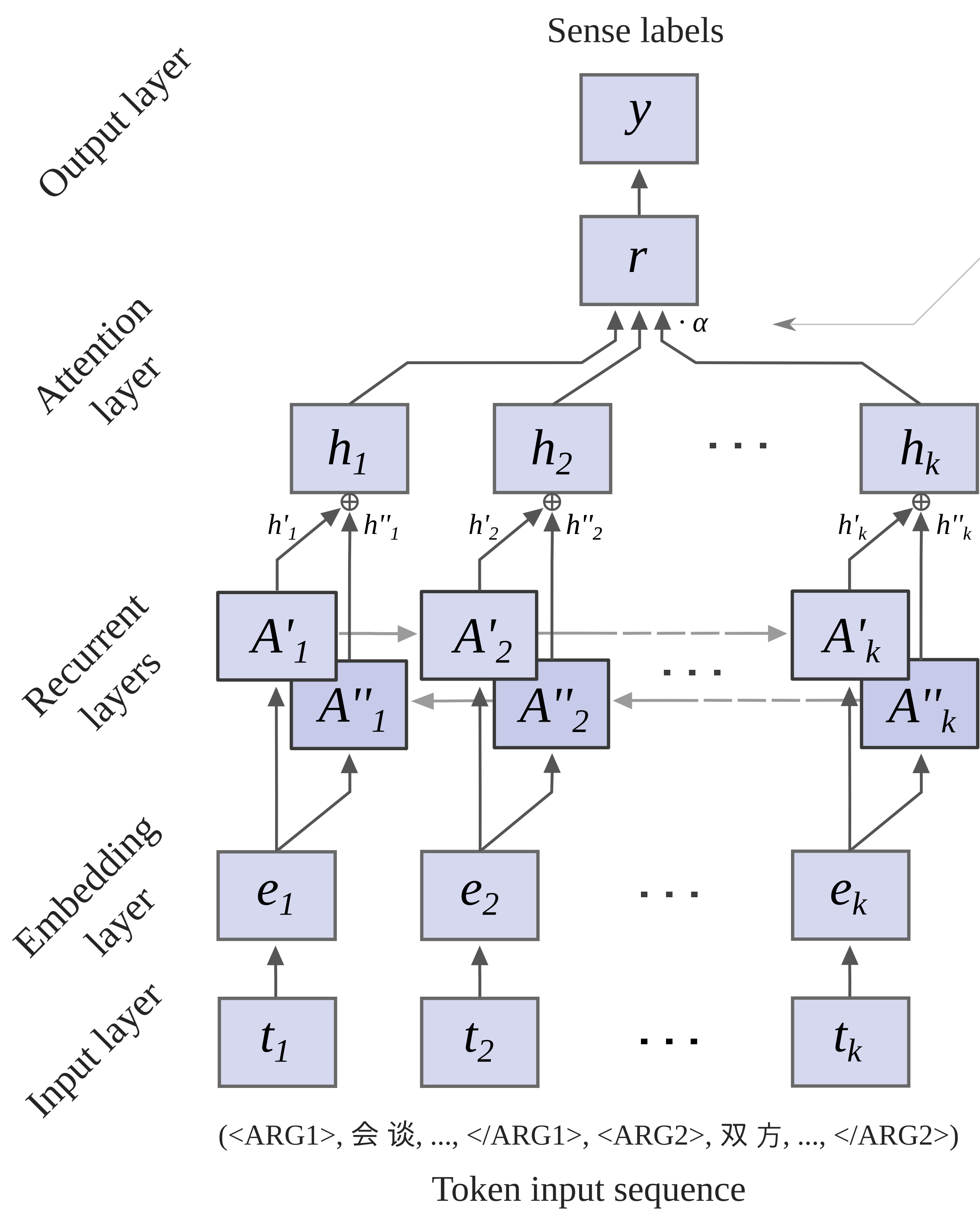


An Attention-based Bidirectional LSTM classifier:



Motivation

- Most previous systems are word-order agnostic → recurrent modeling
- Implicit relations are prevalent in Chinese
- We release an implicit sense classifier, developed on Chinese data

Attention mechanism

Weighting by trainable w :
 $\alpha = \text{softmax}(w^T \tanh(H))$

Output:
 $r = H\alpha^T$

- Improves performance
- Highlights important tokens

Partial argument sampling

Data augmentation:
Training instance $(arg1, arg2, y)$
expands into $\{(arg1, arg2, y), (arg1, arg2, y), (arg1, y), (arg2, y)\}$

- Inspired by psycholinguistic research on discourse phenomena
- Aims to encourage representations of individual arguments, and their composition
- Improves performance

Joint sequence modeling: Flexible modeling of the two discourse arguments as *one* sequence

State-of-the-art performance

Evaluated on Chinese Discourse Treebank Test Set (CDTB; Zhou and Xue (2012))

Rank	System	% accuracy
1	Wang and Lan (2016)	72.42
2	Schenk et al. (2016)	71.87
3	Rutherford and Xue (2016)	70.47
4	Qin et al. (2016)	67.41
5	Weiss and Bajec (2016)	64.07
6	Weiss and Bajec (2016)	63.51
7	Jian et al. (2016)	21.73
Our system:		73.01

Ablation study:

- w/o attention layer: -2.70% acc.
- w/o partial sampling: -5.74% acc.

Visualizing model attention: Relation recognition on the Chinese Discourse Treebank

CONJUNCTION:

<Arg1> 会谈 就 一些 原则 和 具体 问题 进行 了 深入 讨论 , 达成 了 一些 谅解 </Arg1>

In the talks, they discussed some principles and specific questions in depth, and reached some understandings

<Arg2> 双方 一致 认为 会谈 具有 积极 成果 </Arg2>

Both sides agree that the talks have positive results

ENTREL:

<Arg1> 他 说 : 我们 希望 澳门 政府 对于 这 三 个 问题 继续 给予 关注 ,

He said: We hope that the Macao government will continue to pay attention to these three issues,

以 求得 最后 的 妥善 解决 </Arg1>

in order to find a final proper solution

<Arg2> 李鹏 说 , 韦奇立 总督 为 澳门 问题 的 顺利 解决 做 了 许多 有益 的 工作 ,

Peng Li said, Governor Liqi Wei has done a lot of useful work for the smooth settlement of the Macao question,

对 此 我们 表示 赞赏 </Arg2>

we appreciate that

