

Improvise Storytelling Agents

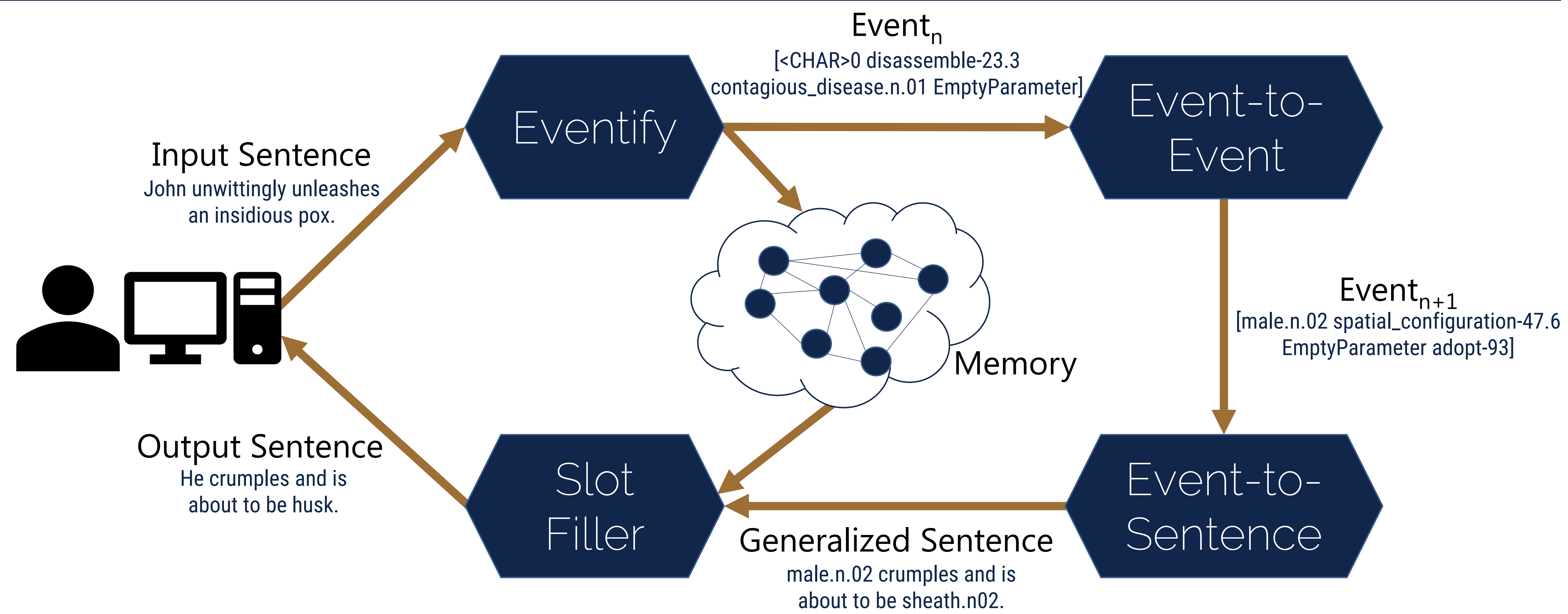
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INTRODUCTION

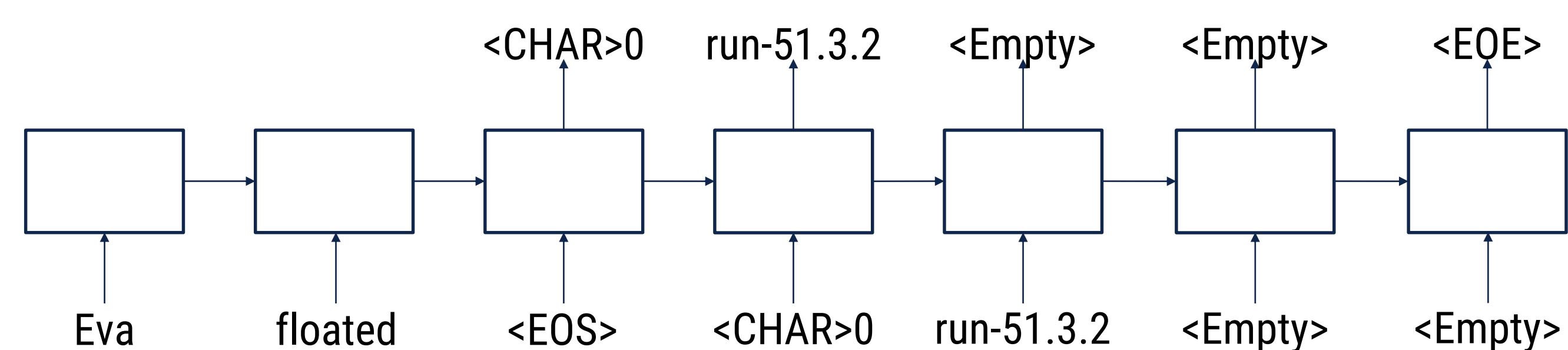
- **Improvise storytelling:** 1+ agents collaborating to create a new story in real time without advance notice of the topic
- **Can an AI improvise stories?**
 - This can be a difficult problem for humans, but extremely challenging for AI because of the space of possible stories: anything that can be expressed with language
 - If we are able to create an agent that can improvise, this would improve our interactions with computers
- **Agents have a hard time predicting the next sentence in a story**
 - Solution: event representations
 - [subject, verb, direct object, modifier]
 - Agents have an easier time predicting the next expected event (Event-to-Event)
 - Event representations can still be “translated” back into English sentences (Event-to-Sentence)
- **What about specifics like character names?**
 - Memory network remembers what has been said in the story and fills in the blanks in our generalized, generated sentences

END-TO-END PIPELINE

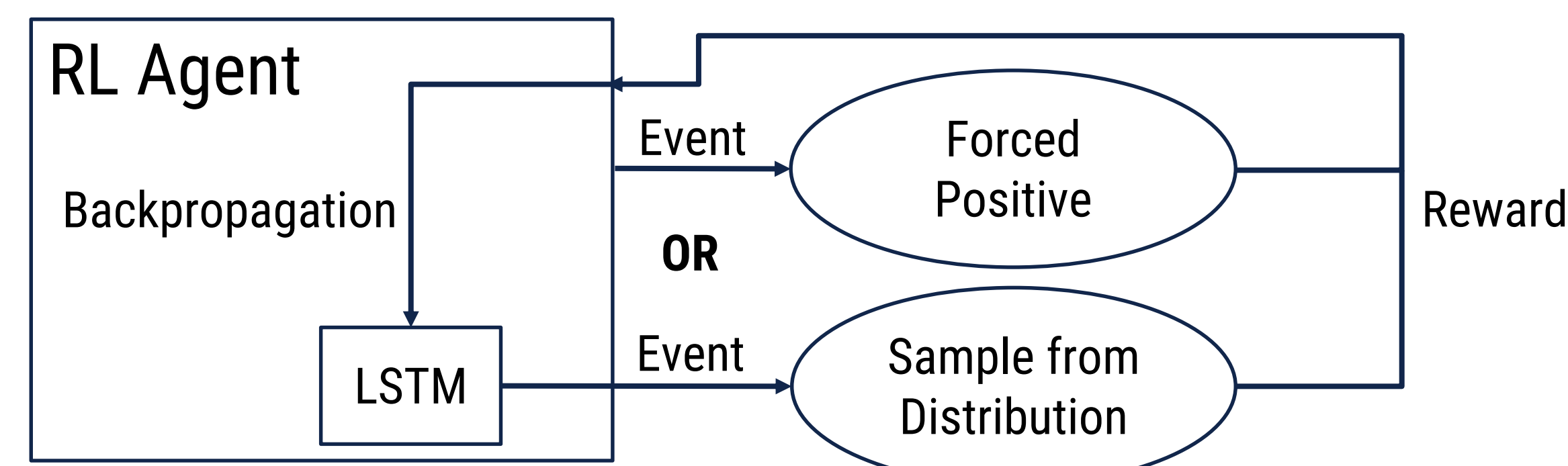


EVENT-TO-EVENT MODELS

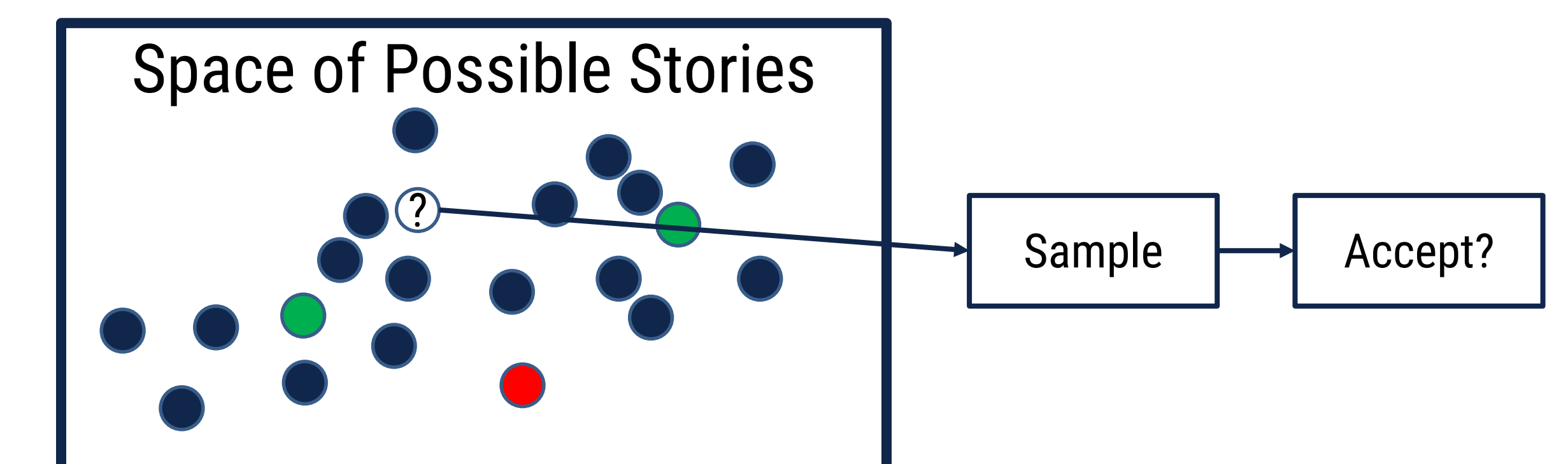
Sequence-to-Sequence



Deep Reinforcement Learner



Markov-chain Monte Carlo



Experiment	Input (Previously Unseen)	Generated Next Sentence(s), Filled In (Commas and apostrophes added by hand for better readability.)
Sequence-to-Sequence LSTM	Caleb hated the evil wizard.	Sue meets the wizard.
Deep Reinforcement Learner (DRL)	John rode his horse to the bank.	John theseus the horse off the bank. The horse proves himself as a lawn chair entrepreneur. The give phase the reassigns cat. Oilman possesses John Kelley's lover, Loneta Denise. Together, bank slices the kidnaps uniform. John is confronts to owes the main bank of the improvised snuffler in the stain. The phony faller then arrives back to the that. The that marry a great anger in hate.
Markov-chain Monte Carlo (MCMC)	Jon and Mary walk to the bridge.	Enrolled, Jon walks into the bridge. Jon is gathers by she yellow man. The financial institution threatens Jon volume parent in respects. Willing to starting. Jon sneaks out. Sorus is saved by a criminal. The criminal accidentally gets that warplane failure. Scattered is being held at the mortie piece length. He agrees to marry she. What is shared. Jon is forced to live.

