

## **Interaction and Language Grounding**

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Despite the exciting new capabilities in language understanding and generation brought about by recent advances, today's language models lack meaningful grounding to extra-linguistic cues such as visual signals or actions in the physical world. While traditional NLP tasks have focused on learning representations and making decisions from text alone, understanding language requires situational context in order to resolve ambiguities, provide appropriate responses and avoid incorrect inferences. In this talk, I will present novel computational models that integrate interactive decision making with language understanding to induce grounded representations of semantics. These techniques not only enable task-optimized representations, but also exploit language for faster and more efficient learning. In part one, I will describe approaches to leverage reward-based feedback to learn language. In the second part, I will exhibit frameworks that can exploit language understanding for better generalization and sample efficiency in both supervised and reinforcement learning.