# Word Games

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September 21, 2021

Language Games

- ▶ Interaction is important
    - ▶ Cannot fully automate every task, i.e. task-oriented or information seeking dialogues
    - ▶ Must handle diverse human input, although they may map to a low-dimensional manifold
- ▶ Interaction is hard
    - ▶ Human input is expensive and therefore limited
    - ▶ In order to make certain problem aspects tractable, must make sacrifices in other (toy domain = out of distribution for pretrained models)
- ▶ What are the main challenges in language games, and what are the tradeoffs of different approaches?

3 Challenges in Language Games

1. Meaning representations
   - A
2. Learning to plan
   - A
3. Modeling other agents
   - A

Axes of Tractability

- A
  - B
- A
  - B
- A
  - B
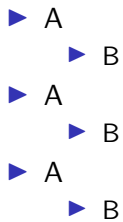
Meaning reps

- In full generality, this problem is often encountered in hierarchical RL
    - Less bleak in the language gamesetting
    - Games are often very simple and can be constrained to small horizons, for example He He engineered a parser and policy that basically solves the negotiation task
- Many text-specific meaning representations (MR) to choose from
    - Many are too complex
    - Can we leverage existing MRs to learn a minimal task-specific representation that balances utility and expressivity?

Learning to plan

►

Citations I