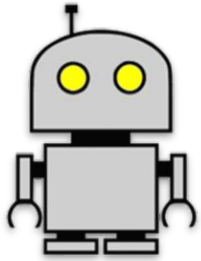


Searching with Opponent-Awareness

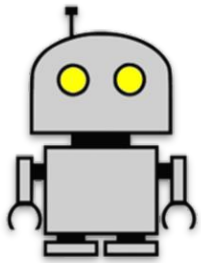


Timy Phan

Department of Computer Science and Mathematics
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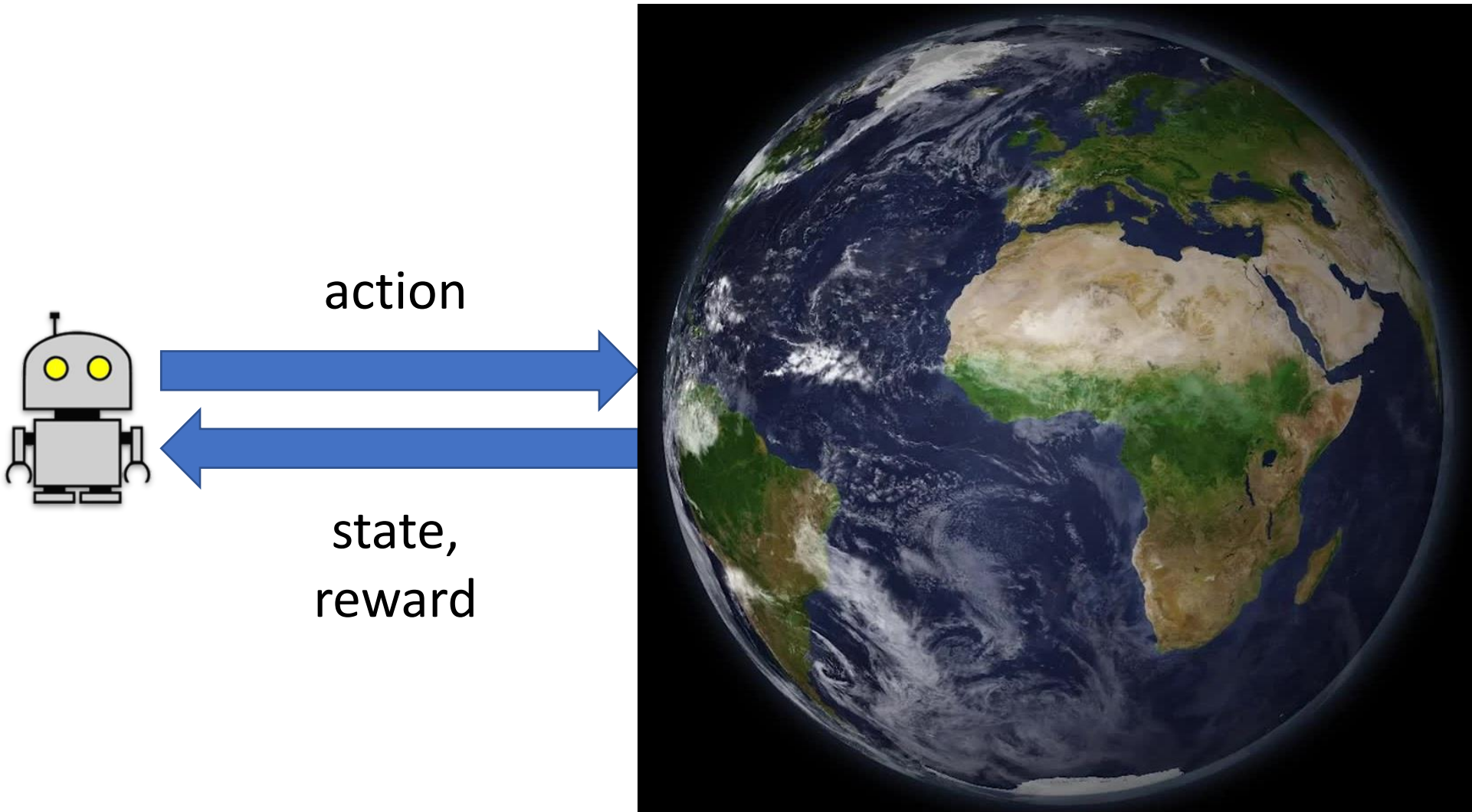
Source: <https://www.iea.org/world>



action

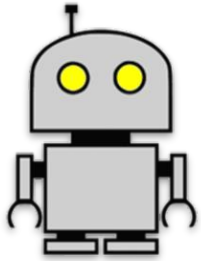


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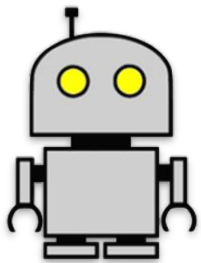
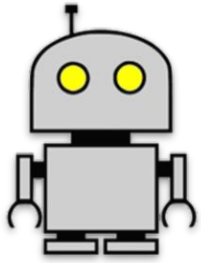
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Opponent-awareness?



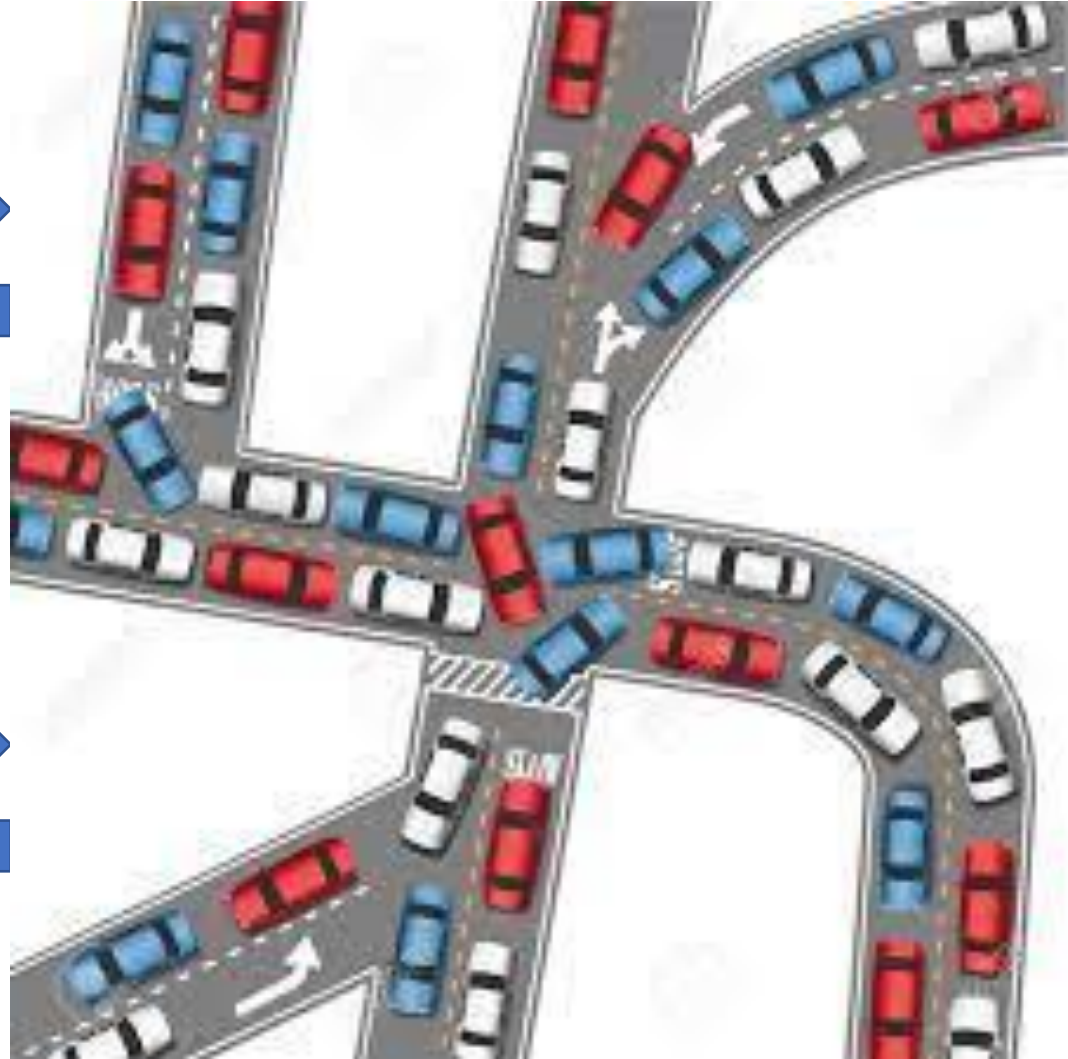
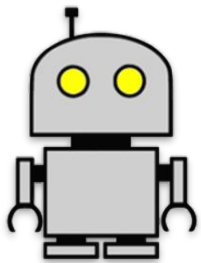
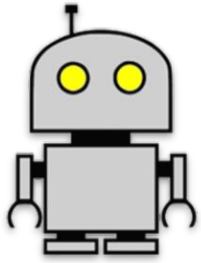
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Opponent-awareness?



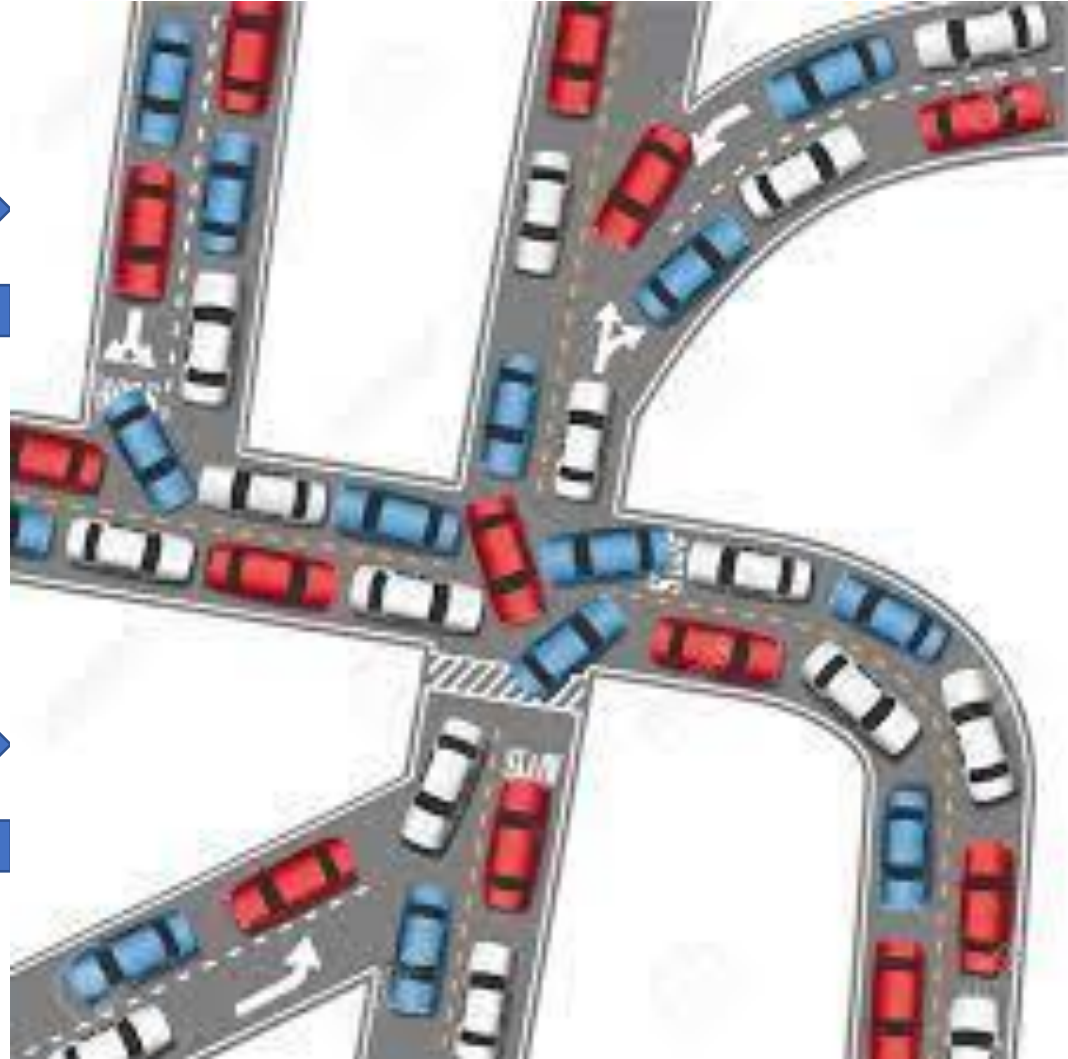
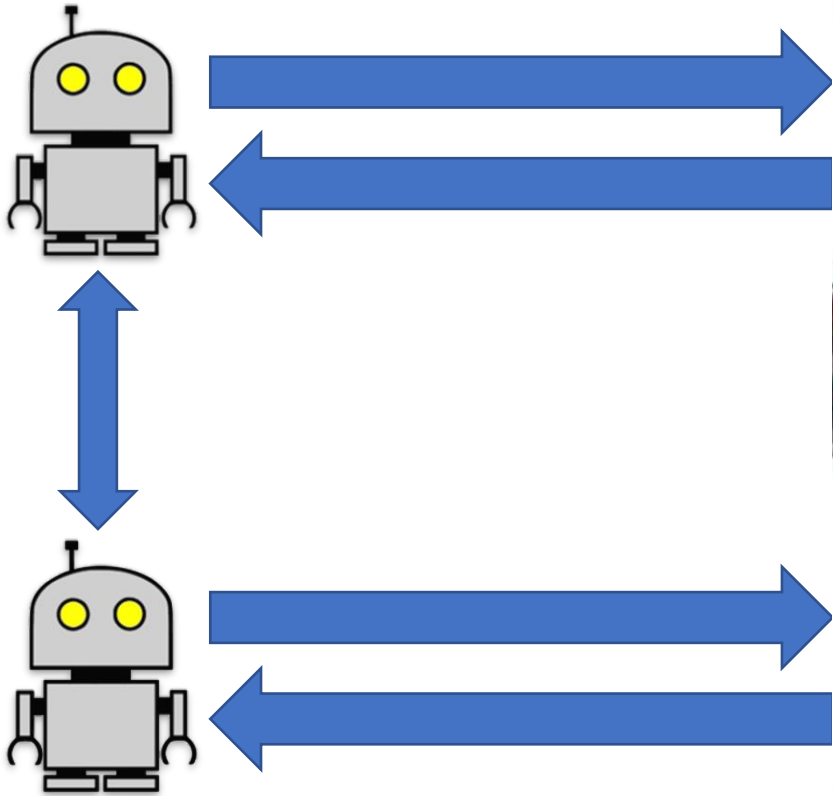
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Opponent-awareness?



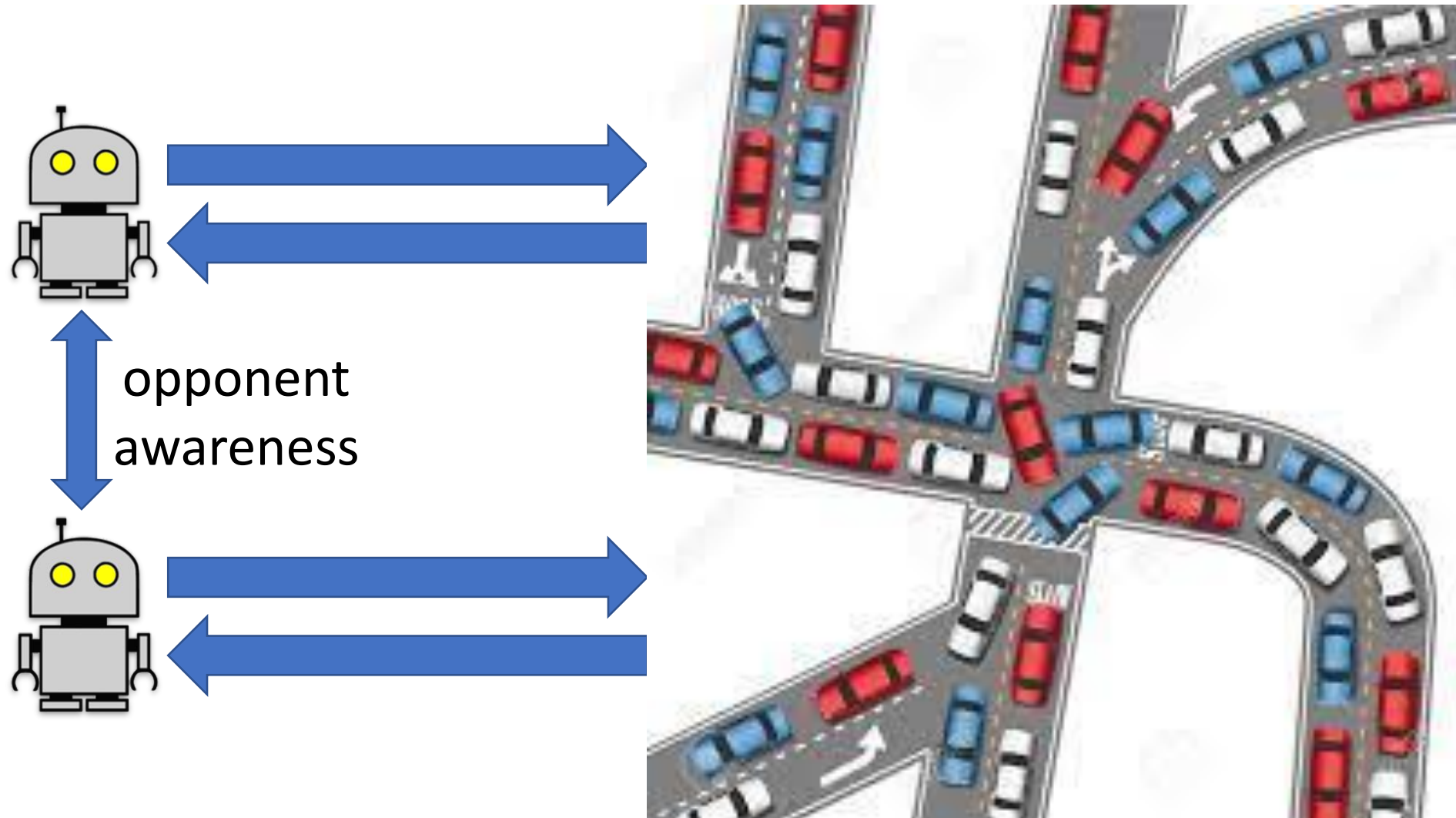
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Opponent-awareness?



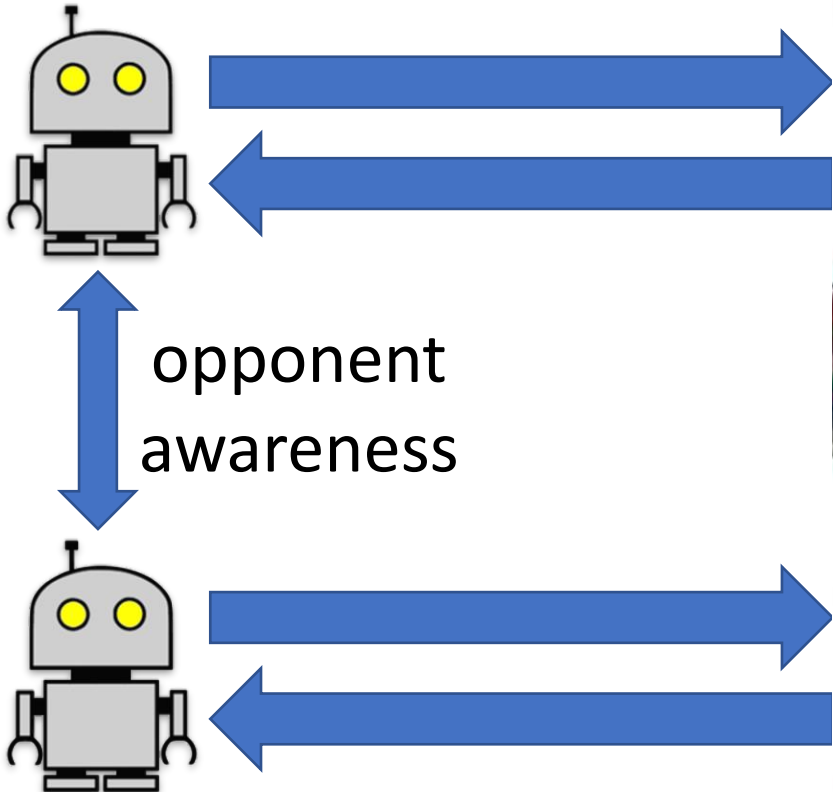
Source: <https://www.iea.org/world>

Opponent-awareness?



Source: <https://www.iea.org/world>

Opponent-awareness?



Source: <https://www.iea.org/world>

Searching with Opponent-Awareness

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- **GR**Adient-**B**ased bandit (GRAB), enhanced with Learning with **O**pponent-**L**earning **A**wareness (**LOLA**)

Searching with Opponent-Awareness

- **GR**Adient-**B**ased bandit (GRAB), enhanced with Learning with **O**pponent-**L**earning **A**wareness (**LOLA**)
- Opponent-aware bandits as the selection strategy in **M**onte **C**arlo **T**ree **S**earch (**MCTS**)

My contributions

- Opponent-aware multi-armed bandit

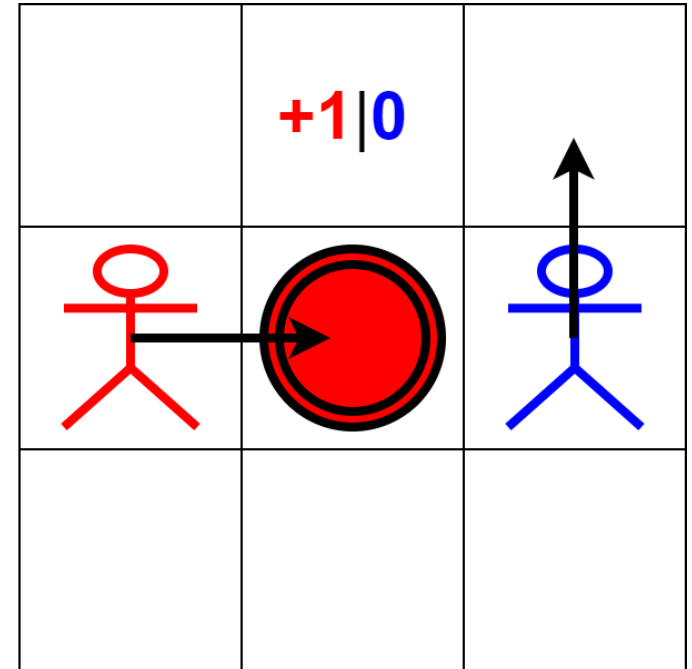
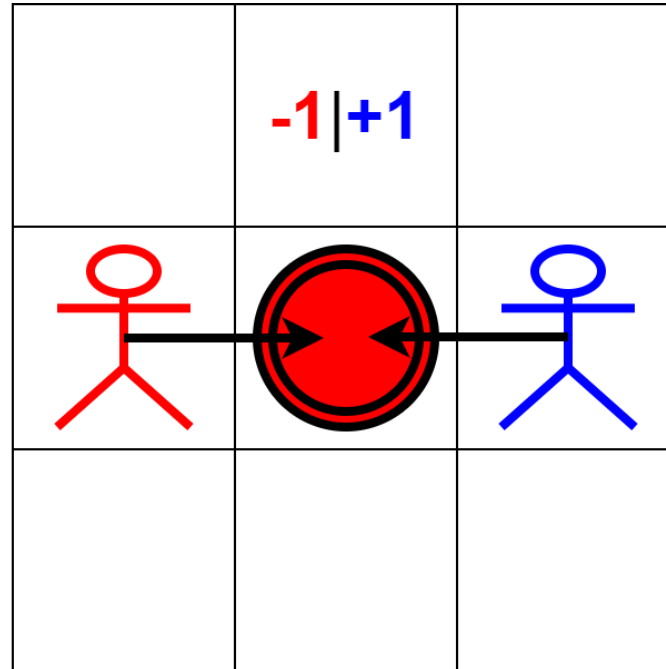
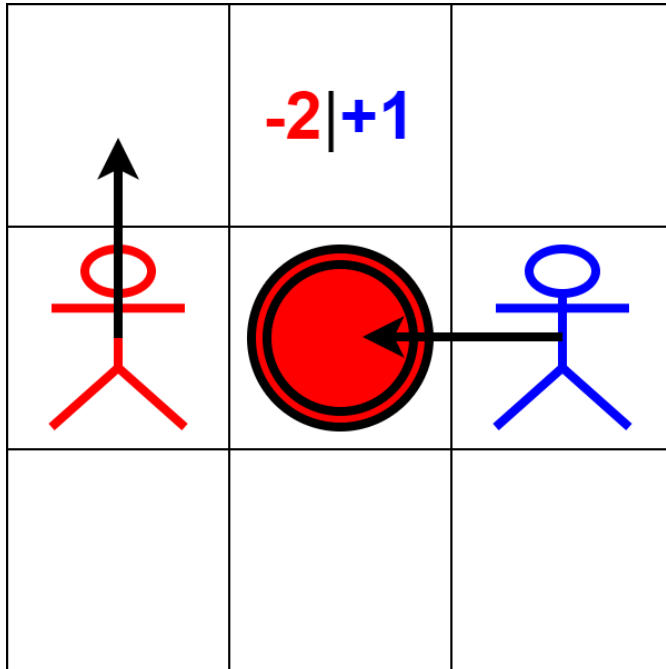
My contributions

- Opponent-aware multi-armed bandit
- Decentralized MCTS with opponent-aware bandits

My contributions

- Opponent-aware multi-armed bandit
- Decentralized MCTS with opponent-aware bandits
- Evaluation in several domains, w.r.t. to different criteria

Coin game



Results

