

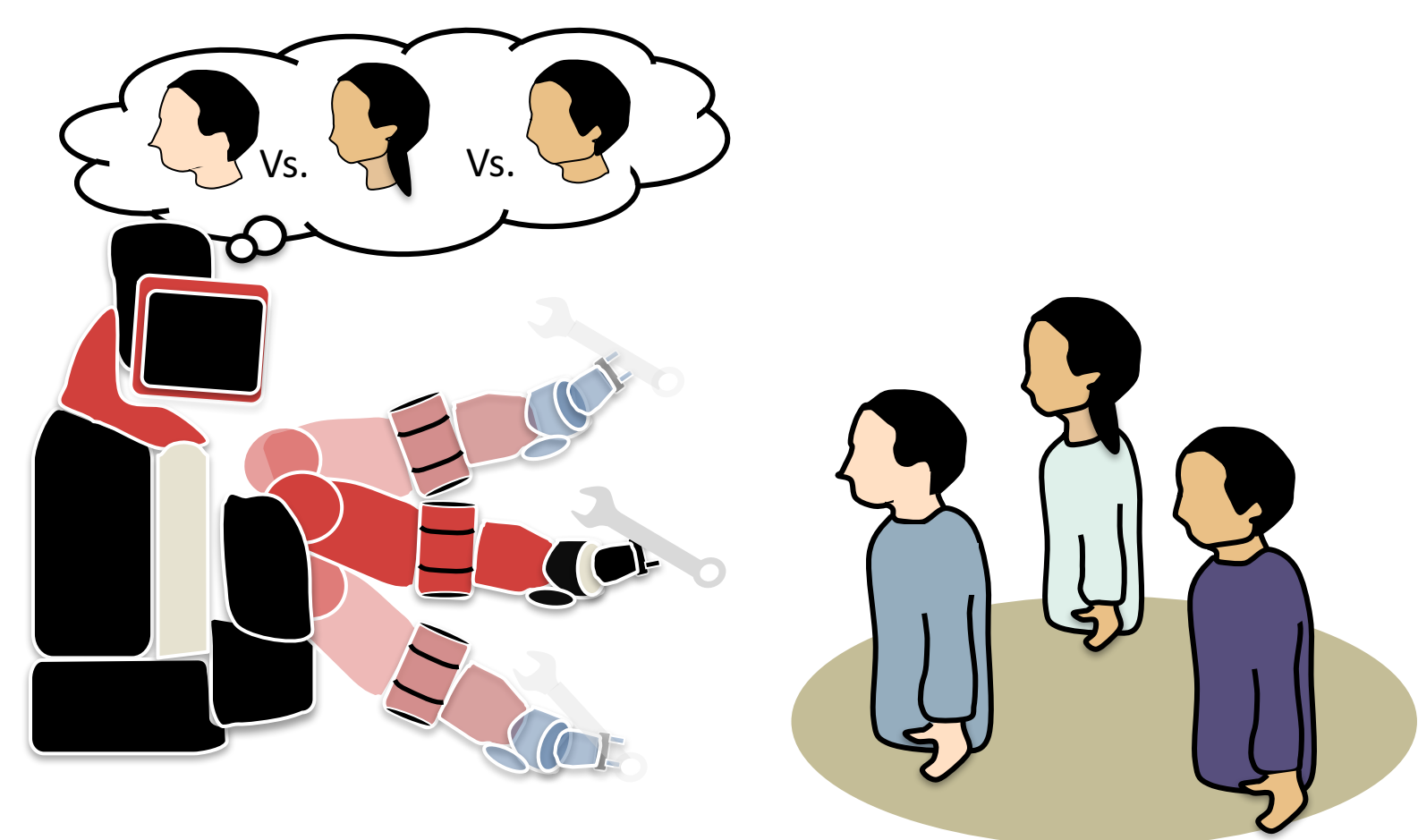
CPS: Synergy: Coordinated Action Among Independent Mobile Cyber-Physical Systems

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Problem Definition



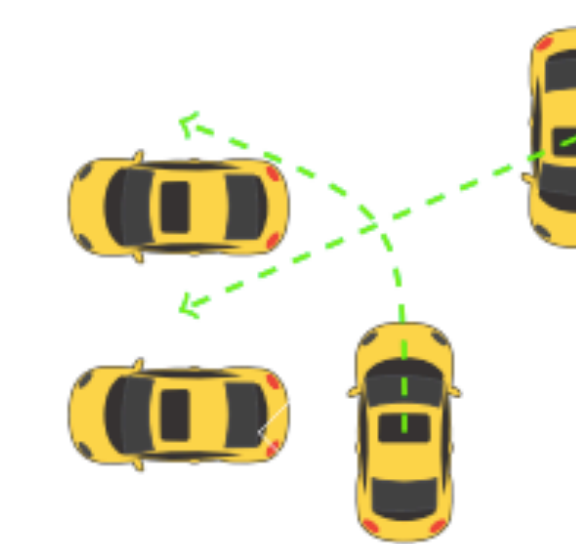
Motivation

How can robots reason about human (or robot) capabilities and limitations during multi-agent collaboration?

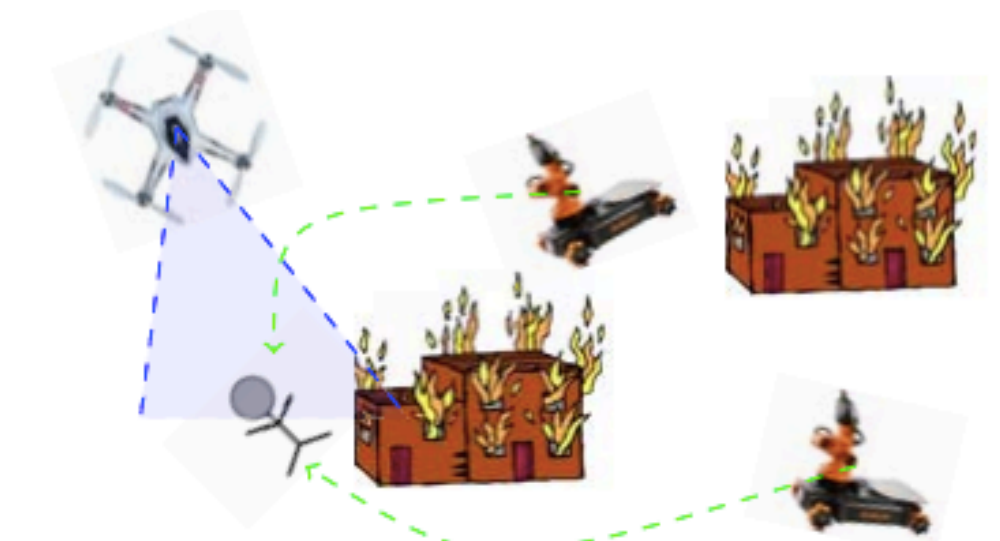
How can we create a platforms for rapid testing and refining of algorithms for multi agent resource distribution?

Questions

Impact



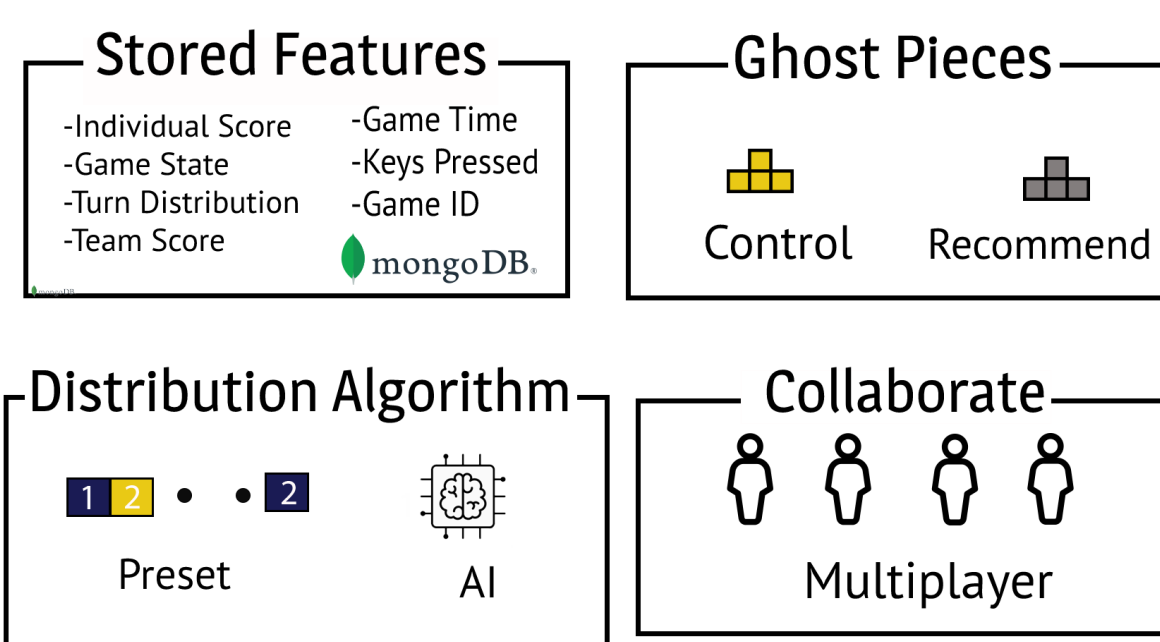
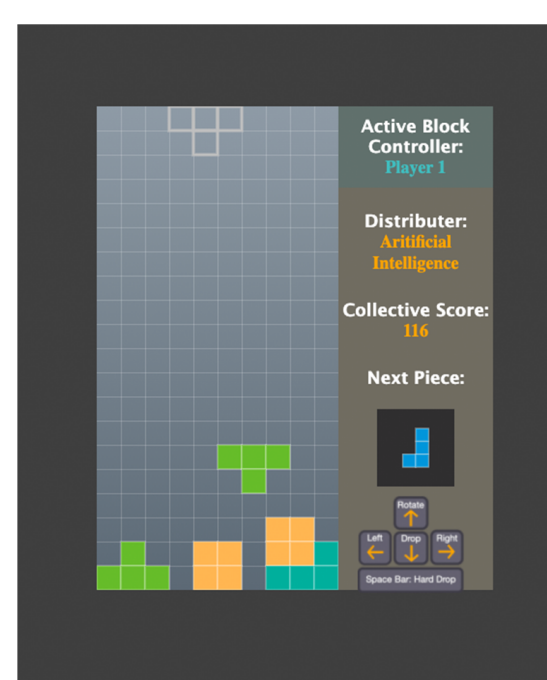
Autonomous Vehicles



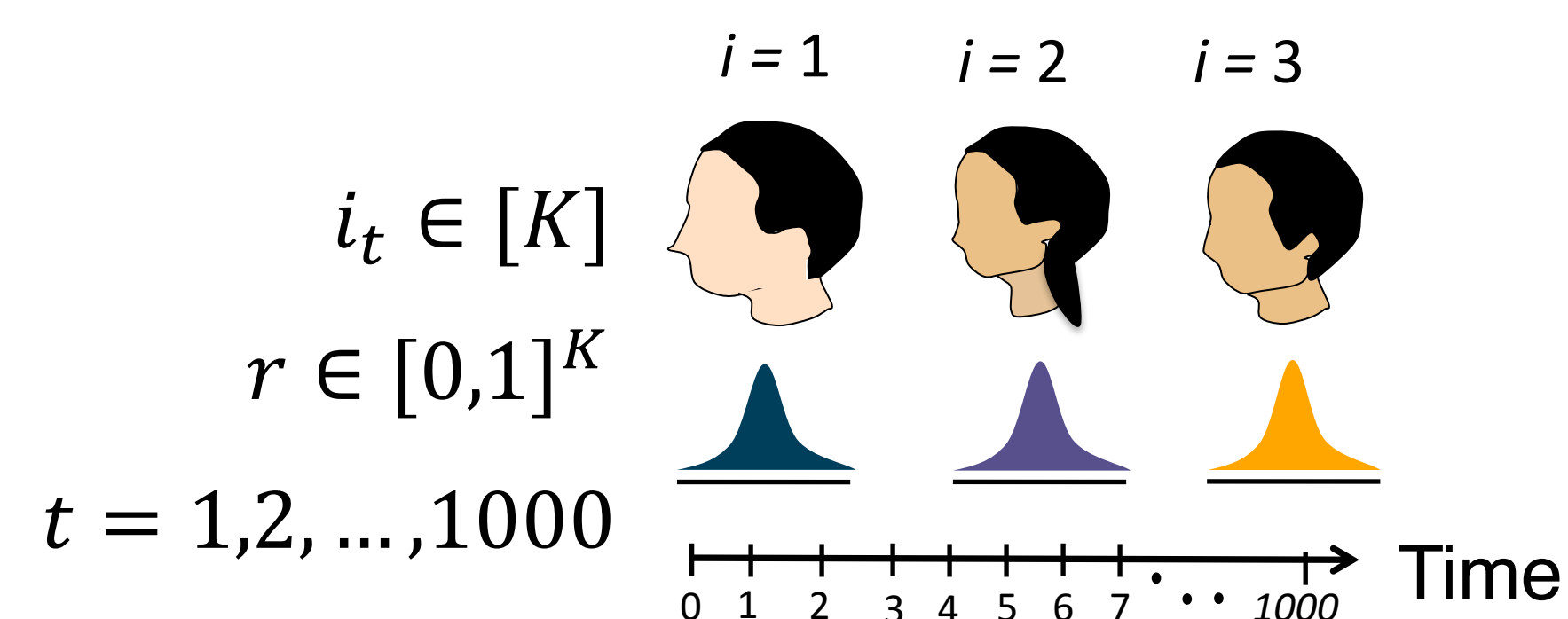
Search and Rescue

Approach

Co-Tetris: A Multiplayer Tetris Game



Multi-Armed Bandit (MAB)



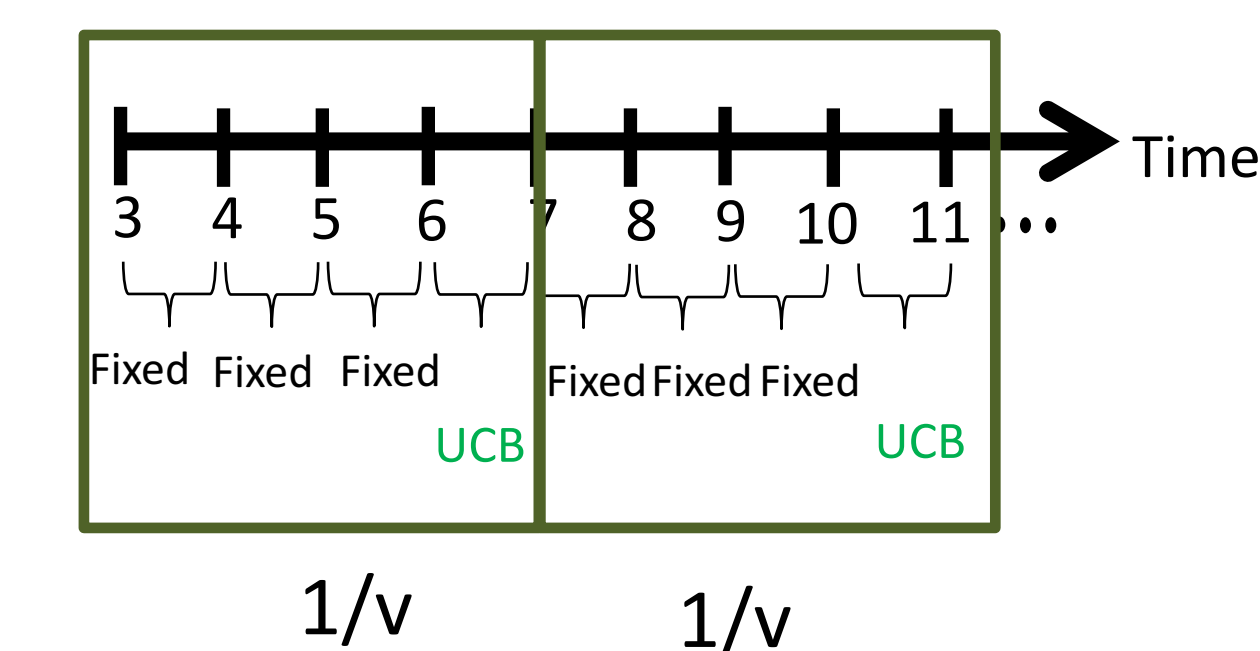
Strict Rate Constraint UCB

$t = 1,2, \dots, 1000$

$v =$ Minimum Pulling Rate

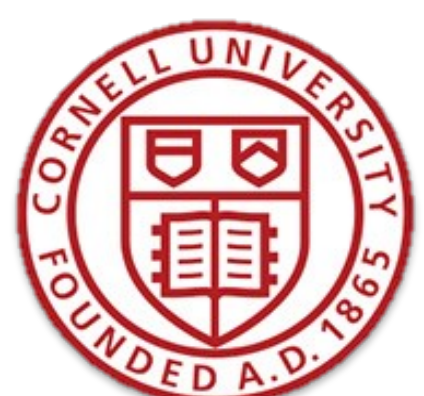
$S =$ Fixed Indices

Example: $v = 1/4$



Broader Impact

- Open-source platform for multi agent experimentation.
- Results can be integrated into a robotics course curricula.



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