# *Seminar on*
Artificial Intelligence II

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Structure

- Solving **micro-projects** (1-3 students) on specific topics from areas such as multi-agent path finding, adversarial search, computer vision, machine learning, etc. using a swarm of Ozobot robots.

- Each team will report three times:
  - project vision (what we are going to do, oral)
  - progress report (where we are now, oral)
  - final report (what we did, oral+written)

Multi-Agent Pathfinding (MAPF)
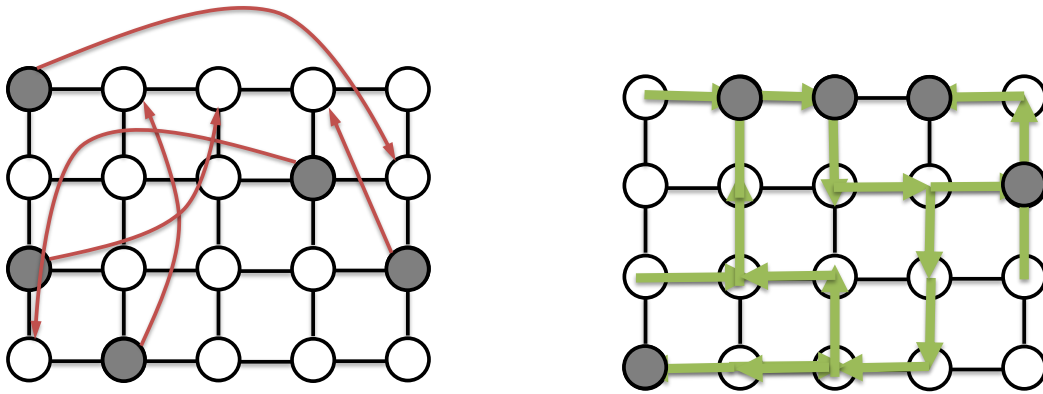
Find a **collision-free** plan (path) for each agent
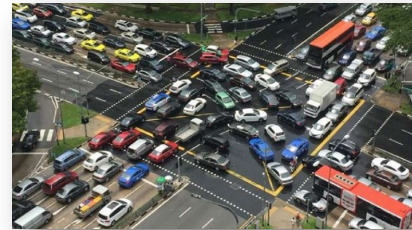
Solving approaches

Search techniques

state-space search (A*)

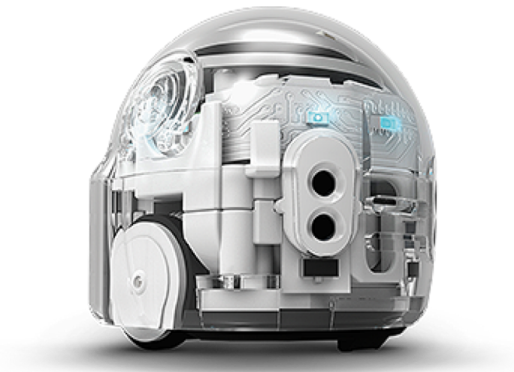   state = location of agents at nodes

    transition = moving agents to neighboring nodes

conflict-based search

Compilation techniques

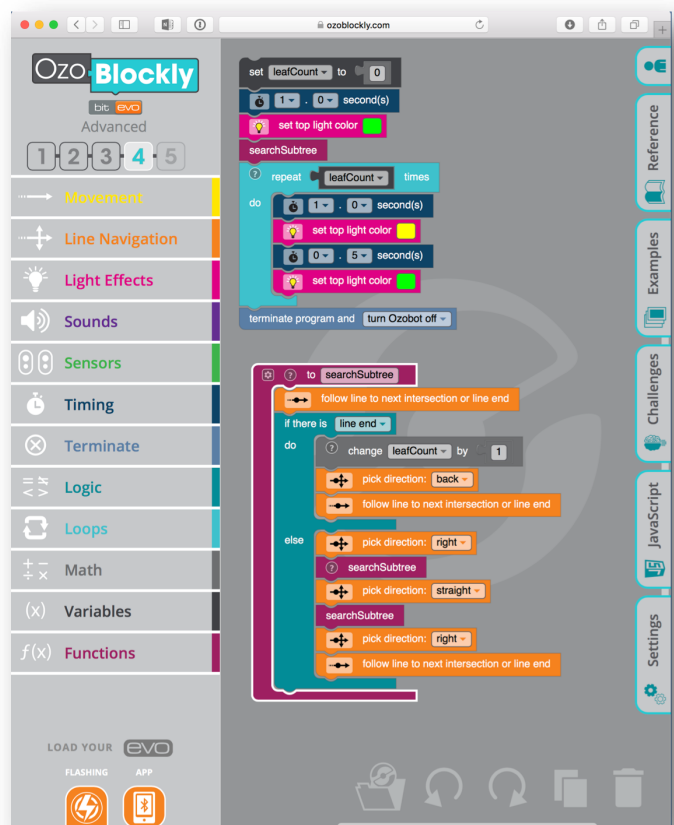translate the problem to another formalism
(SAT/MIP/CSP)

Ozobot Evo

- Line following (and color detecting)
- Proximity sensors
- Speaker
- Bluetooth

OzoBlocky

- Control commands
- Sensor readings
- Programing structures

Possible projects

- Path Finding
  - Multi-agent, single-agent
  - Centralized, distributed
  - Offline, online
- Computer vision
  - Map construction from line drawing
  - Robot tracking
- Intention detection
  - Predicting next move based on moves so far
- …

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