**Run Iterations and Results:**

* Text

  Description automatically generated1ST Run

Text

Description automatically generated

A-STAR PRM

* Text

  Description automatically generated2nd Run

Text

Description automatically generated

A-STAR PRM

* Text

  Description automatically generated with medium confidenceGraphical user interface, text, application

  Description automatically generated3rd Run

A-STAR PRM

* Text

  Description automatically generated with medium confidence4th Run

Text

Description automatically generated

A-STAR PRM

* 5th Run

Text

Description automatically generatedText

Description automatically generated

A-STAR PRM

Discussion:

The experimentation yielded the following results:

* Hybrid A\* was able to find optimal parts, but at the cost of exploring more space than PRM.
* Pre-computing roadmaps can help the firetruck reach its destination faster, allowing it to cover more ground before the fire spreads, thus reducing its spread.
* The graph-based planner was observed to have a higher intact ratio than the sampling-based algorithm. This is because the graph-based planner selects an optimal path for the firetruck to follow.

Reference:

[1][GitHub - AtsushiSakai/PythonRobotics: Python sample codes for robotics algorithms.](https://github.com/AtsushiSakai/PythonRobotics)

[2] [Planning Algorithms / Motion Planning (lavalle.pl)](http://lavalle.pl/planning/)