CSE 571 Fall 2022

Project Topic 2.Life Long Planning TEAM PLAN and Meeting Notes

Team Skynet

1) Deepthi Reddy Obulareddy Gari (Team Leader) - 1225492203
2) Harish Paul Thavisi - 1224516787
3) Krishna Sree Gottumukkala - 1222271765
4) Sreshta Chowdary Kampally - 1224031900

Meeting Schedule : Every Friday 3PM

Project Milestones

WEEK	TIMELINE	DESCRIPTION
1	Oct 24-30	Thorough understanding of the paper and existing codebase (project 1)
2	Oct 31- Nov 6	D* LITE algorithm implementation and debugging
3	Nov 7-13	Testing performance and results comparison in various environments
4	Nov 14-20	Statistics generation and improvements
5	Nov 21-27	Final draft of the code base
6	Nov 28-Dec 5	Final draft of the report

Tentative Task Assignments

Week	Deepthi Reddy	Harish Paul	Krishna Sree	Sreshta
1	Understanding paper	Understanding paper	Understanding paper	Understanding paper
2	Algorithm design	Algorithm design	Code Implementation	Code Implementation
3	Debugging and refactoring the code	Testing under various task environments	Debugging and refactoring the code	Testing under various task environments
4	Performance analysis	Performance analysis	Statistical Analysis	Statistical Analysis
5	Drafting the code base	Drafting the project report	Drafting the project report	Drafting the code base
6	Final Project report evaluation and improvements	Final Project report evaluation and improvements	Final Project report evaluation and improvements	Final Project report evaluation and improvements

Scribe name: Harish Paul Thavisi
Meeting date: 10/28/2022 (week 1)
Attendance: Everyone
Milestone for this meeting : Understanding the paper
Status from each member:

1. Deepthi Reddy: Conveyed the progress made in the paper and the difficulties in the understanding of the paper.
2. Sreshta: Finished the paper reading and gave the overview of the D* lite algorithm. She came up with the approaches to help us easily understand the new algorithm with our existing knowledge of the tree.
3. Krishna Sree: Finished with the understanding of the paper, She resolved the difficulties that are being faced by the team. How the algorithms differ in the implementation part compared to that of the A*.
4. Harish Paul: I was in between the paper going through the algorithms and actively participated in resolving the issues that the team faced while reading through the paper.

   Deepthi gave the feedback on the tasks that can be enhanced in the further weeks which can help us easily test the changes made. How the work in the further weeks can be conducted as the next week's task is planned groupwise. And also planned to meet in person in the college for further progress of the project.

Plan for next week: algorithm and code implementation (make a copy of code in github and push the updates).

Scribe name: Sreshta Chowdary Kampally
Meeting date: 11/4/2022 (week 2)
Attendance: Everyone
Milestone for this meeting: Code implementation.
Status from each member:

1. Deepthi Reddy: Designed the algorithms for functions needed for D* Lite and started implementing them in search.py based on the function definitions given in the paper.
2. Sreshta: Started implementing functions needed for D* Lite Search in search.py based on the algorithm given in the paper.
3. Krishna Sree: Started implementing functions needed for D* Lite Search in search.py based on the algorithm given in the paper.
4. Harish Paul: Designed the algorithms for functions needed for D* Lite and started implementing them in search.py based on the function definitions given in the paper.

   We have created the github repository based on individual project 1 and started implementing the search algorithms. We all discussed the progress of the code and checked on things that can be optimized in the code

Plan for next week: Code completion and testing.

Scribe name: Krishna Sree Gottumukkala
Meeting date: 11/11/2022 (week 3)
Attendance: Everyone
Milestone for this meeting : Debugging and refactoring the code.
Status from each member:

1. Deepthi Reddy: Implementation of the code is finalized and updated the function planned out in the search and searchAgents python file. Started debugging the D* Lite search code and refactored accordingly.
2. Sreshta: Optimized the D* lite search code written by deepthi and harish and Designed algorithms for the additional methods required by priority queues in util.py with the help of Harish and also designed custom layouts for testing the D* lite in a different environment.
3. Krishna Sree: Implementation of the code is finalized and updated the function planned out in the search and searchAgents python file. Started debugging the optimized D* Lite Search code and refactored accordingly. Refactored the code with the help of deepthi.
4. Harish Paul: Implemented the priority queue methods in util.py and helped Sreshta with the pseudocode for these methods. Designed custom layouts for testing the D* lite in a different environment.

   We all discussed the progress of the code and checked on things that can be optimized in the code and designed multiple testing layouts of different complexities.

Plan for next week: Designing and Implementation of Replanning algorithm for baseline methods. Upon discussions with the team, we have decided to postpone performance analysis to the next upcoming week since we need to evaluate the baseline methods.

Scribe name: Harish Paul Thavisi
Meeting date: 11/19/2022 (week 4)
Attendance: Everyone
Milestone for this meeting : Designing and Implementation of Replanning algorithm for baseline methods.
Status from each member:

1. Deepthi Reddy: Started implementing the replanning algorithm for the baseline methods. Completed debugging the code parts in search.py and searchAgents.py and tested the code correctness.
2. Sreshta: Designed and wrote a pseudocode for a replanning algorithm. Completed debugging the code parts in util.py and tested the code correctness.
3. Krishna Sree: Designed and wrote a pseudocode for a replanning algorithm. Completed debugging the code parts in searchl.py and searchAgents.py and tested the code correctness.
4. Harish Paul: Started implementing the replanning algorithm for the baseline methods. Completed debugging the code parts in util.py and tested the code correctness.

   Completed the code and tested it in one environment, “bigMaze” layout, using the below command to check for the correctness of the code.

```
python pacman.py -l bigMaze -z .5 -p SearchAgent -a
fn=dstar,heuristic=manhattanHeuristic
```

Plan for next week: Testing the code for different environments and performing analysis. We planned to skip the task of drafting the code base since we are using individual project 1 as our code base.

Scribe name : Sreshta Chowdary Kampally
Meeting date: 11/26//2022 (week 5)
Attendance: Everyone
Milestone for this meeting : Testing the code for different environments and performing analysis.
Status from each member:

1. Deepthi Reddy: Distributed the workload with Harish and tested D*lite search algorithm on a few testing environments among the selected layouts. Started to lookup the detailing on T-test and how it can be visualized to enhance the results. Started working on the final report (Methodology and Results)
2. Sreshta: Distributed the workload with Krishna Sree and tested Replanning algorithm on a few testing environments among the selected layouts and compared the results with D* lite results. Started writing the final report. (Introduction and Implementation)
3. Krishna Sree: Distributed the workload with Sreshta and tested Replanning algorithm on a few testing environments among the selected layouts and compared the results with D* lite results. Started writing the final report. (Abstract and Implementation)
4. Harish Paul: Distributed the workload with Deepthi and tested D*lite search algorithm on the remaining testing environments. Started to lookup the detailing on T-test and how it can be visualized to enhance the results. Started writing the final report (Methodology and Results)

Completed testing D* lite search in various environments and compared them with other search algorithms. We made a few observations on how pacman behaves in different environments when we use D* lite algorithm. Started writing the final report.

Plan for next week: Complete the initial draft of the report and discuss further changes to the report.

Scribe name: Krishna Sree Gottumukkala
Meeting date: 12/2/2022 (week 6)
Attendance: Everyone
Milestone for this meeting : Final Project report evaluation and improvements
Status from each member:

1. Deepthi Reddy: Completed writing the team effectiveness report. Completed the initial draft of the Final Project report.
2. Sreshta: Completed the initial draft of the Final Project report. Added all the instructions to run the project using multiple layouts in the README file in a document.
3. Krishna Sree: Completed the initial draft of the Final Project report. Attached all the instructions to run the project using multiple layouts in the README file in a document.
4. Harish Paul: Completed the initial draft of the Final Project report. Attached all the instructions to run the project using multiple layouts in the README file in a document.

Completed the initial draft of the final project report and discussed further improvements to make in the report.

Plan for Dec 5th: Plan to meet to finalize the project report, sign the team effectiveness report and update the github repository with readme file.

Scribe name: Harish Paul Thavisi
Meeting date: 12/5/2022 (week 7)
Attendance: Everyone
Milestone for this meeting : Final Project Submission
Status from each member:

1. Deepthi Reddy: Completed the Final Project report.
2. Sreshta: Completed the Final Project report. Signed the team effectiveness report.
3. Krishna Sree: Completed the Final Project report. Signed the team effectiveness report.
4. Harish Paul: Completed the Final Project report. Signed the team effectiveness report.

We have finalized the final project report and updated the github repository with a readme file. All the other team members have signed the team effectiveness report.