**LISTED RESPONSE TO COMMENT/SUGGESTIONS OF**

***REVIEWER 3***

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| ***No*** | ***Reviewer’s Comment/Suggestion*** | ***Author’s Comment*** | ***Action Taken\*\*\**** |
| 1 | In the description of D\* Lite, I think that k\_1(s) = min(g(s),rhs(s)+h(s,s\_{goal}) ) should be k\_1(s) = min(g(s),rhs(s)) + h(s,s\_{goal}). | Thank you for your correction. We've fixed that typo. | The formula is corrected accordingly. |
| 2 | Novelty of the paper has not been highlight clearly. The authors claimed that they proposed a GA base multi-objective path planner. However, such GA based planner has been widely studied in literature. I cannot find the new thoughts in Section IV. Please rewrite this paragraph and clearly state what is new. In addition, the author extend single objective optimization to the multi-objective optimization, is this Pareto optimal result? Any differences and why the proposed methods are needed? | Thanks for your suggestions. We actually developed the multi-objective genetic path-planner (MOGPP) as a soft computing alternative in order to evaluate effectiveness of MOD\* Lite algorithm. Furthermore, we only state that MOGPP is a complete algorithm, and eventually finds a solution in search space but does not guarantee optimal solutions and hence Pareto front. With regards to your suggestion, we extend the first paragraph of Section IV as follows;  “Many real-life optimization problems are NP-hard where optimal solutions could not be found in polynomial time. As evolutionary computing methods are classified as stochastic soft-computing methods and can be applied to NP-hard problems, many genetic algorithms are developed with respect to this problem [citations given]. In order to show efficiency and effectiveness of MOD\* Lite algorithm in terms of time and solution quality, we developed a stochastic evolutionary algorithms (a multi objective genetic path planner named MOGPP) as an alternative soft computing genetic realization for finding paths considering multiple objectives and conducted a comparative experimental study. MOGPP is designed as a complete algorithm, which could eventually find non-dominated valid path(s) from initial location to target one, if any exists. It does not guarantee to find optimal solutions and show Pareto front in that respect.” | First paragraph of Section IV is extended. |
| 3 | It is good to see that the authors use large paragraph to compare the results But I would like to see the authors analyze the time and space complexity of the algorithm. | MOD\* Lite algorithm is built upon D\* Lite algorithm. MOD\* Lite is similar to D\* Lite in execution times. Formally, there is no precise complexity analysis for D\* Lite [5]. D\* Lite is similar to A\* but it’s incremental. If the environment is known and stationary their performances are the same. In case the environment is not fully known or changes, it gains by not re-running A\* from start but only the nodes whose evaluation values change are considered. Since it ‘s not possible to know in advance and control what will be changed in the environment, it is not possible to asses the gain of D\* Lite without considering application domain specifics. MOD\* Lite only constructs and updates a directed graph (Figures 1 and 2) to maintain the priority queue as opposed to standard priority queue in the implementation of D\* Lite. Theoretically, their space requirements are of the same order but multi-objective domination test takes some extra time depending on the number of nodes in the graph. | We add this paragraph to the end of Section III.F as the last paragraph |
| 4 | Clear explanation of Figure 5 is necessary. | We added explanation for Figure 5. | We added a paragraph (now the 2nd paragraph of Section V-B) related to Figure 5 as requested. |
| 5 | In the introduction part, authors claimed that current results are not the incremental method. I think you need to do a better literature review. Please be aware of following related papers on the GA multi-objective path planning, the pareto-optimal multi-objective optimization. "K-Order Surrounding Roadmaps Path Planner for Robot Path Planning", Journal of Intelligent & Robotic Systems September 2014, Volume 75, Issue 3-4, pp 493-516; "Sampling-based algorithms for optimal motion planning" International Journal of Robotics Research, Volume 30 Issue 7, June 2011; "Pareto-optimal coordination of multiple robots with safety guarantees" Autonomous Robots, 32(3): 189-205, 2012. Game theory-based negotiation for multiple robots task allocation, Robotica, DOI: 10.1017/S0263574713000192 . "Multiple Objective Genetic Algorithms for Path-planning Optimization in Autonomous Mobile Robots.", Soft Computing, DOI: 10.1007/s00500-006-0068-4. | In accordance with your suggestions, we have also covered following studies in “Related Work and Background” section:   * "K-Order Surrounding Roadmaps Path Planner for Robot Path Planning", Journal of Intelligent & Robotic Systems September 2014, Volume 75, Issue 3-4, pp 493-516; * "Sampling-based algorithms for optimal motion planning" International Journal of Robotics Research, Volume 30 Issue 7, June 2011; * "Pareto-optimal coordination of multiple robots with safety guarantees" Autonomous Robots, 32(3): 189-205, 2012. * Game theory-based negotiation for multiple robots task allocation, Robotica, DOI: 10.1017/S0263574713000192.   As "Multiple Objective Genetic Algorithms for Path-planning Optimization in Autonomous Mobile Robots. , Soft Computing, DOI: 10.1007/s00500-006-0068-4” is already referenced in “Related Work and Background” section, it is remained unchanged. | Modifications and additions are done in accordance with author reply in Section II. |