

# Multi Robot Mapping

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**Abstract**—This project tries to achieve Multi Robot Mapping using Gmapping and multi-robot-merge packages. There are two main problems addressed, one for each author; mimicking a decentralised situation and effective RRT-based exploration strategy. Seohyun mainly worked on the former, Yifan on the latter, with discussions together throughout.

## I. INTRODUCTION

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## II. CENTRALISED MULTI-ROBOT MAPPING

### A. Gmapping and multi-map-merge

briefly explain which files do the job

### B. Giving merged map back to robots

wanted this feature so that robots can explore more efficiently. Yifan sought for approaches but it was not trivial.

### C. Where to go next

re-implementing what package does seemed useless. Seohyun tries to deal with decentralisation, dealing with subsection B on the way as well. Simple object avoidance has been used thus Yifan tries to invent a new exploration approach.

## III. DECENTRALISATION

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### A. First Approach

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### B. Second Approach

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### C. Third Approach

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## IV. RRT-BASED EXPLORATION STRATEGY

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### A. subsection1

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### B. subsection1

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## V. CONCLUSIONS

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

## APPENDIX

Appendices should appear before the acknowledgment.

## ACKNOWLEDGMENT

The preferred spelling of the word acknowledgment in America is without an e after the g. Avoid the stilted expression, One of us (R. B. G.) thanks . . . Instead, try R. B. G. thanks. Put sponsor acknowledgments in the unnumbered footnote on the first page.

References are important to the reader; therefore, each citation must be complete and correct. If at all possible, references should be commonly available publications.

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