

A framework for comparing mobile robot navigation

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Abstract—Exploration and navigation are one of the fundamental problems in mobile robotics. Efforts to address these range from reactive, map-based to learning-based approaches. With each method being developed and tested in an isolated environments, the precise improvements of these methods are unknown. This paper presents a framework to simulate, evaluate and compare these different algorithms. ***** Our results demonstrate how methods compare over a range of attributes and environments. We anticipate that this framework and findings allow for development of more advanced approaches, but also serve as a good step towards navigating dynamic environments.

I. INTRODUCTION

II. RELATED WORK AND BACKGROUND

III. METHODOLOGY

A. Navigational algorithms

B. Experimental environment setup

C. Evaluation methods

IV. RESULTS

V. DISCUSSION AND CONCLUSION