Motion Memory: Leveraging Past Experiences To Accelerate Future Motion Planning

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INTRODUCTION

- Conventional motion planners need to plan from scratch every time
- Motion Memory avoids unnecessary and repetitive replanning when facing similar future planning problems
- Motion Memory reduces future planning time by up to 89%

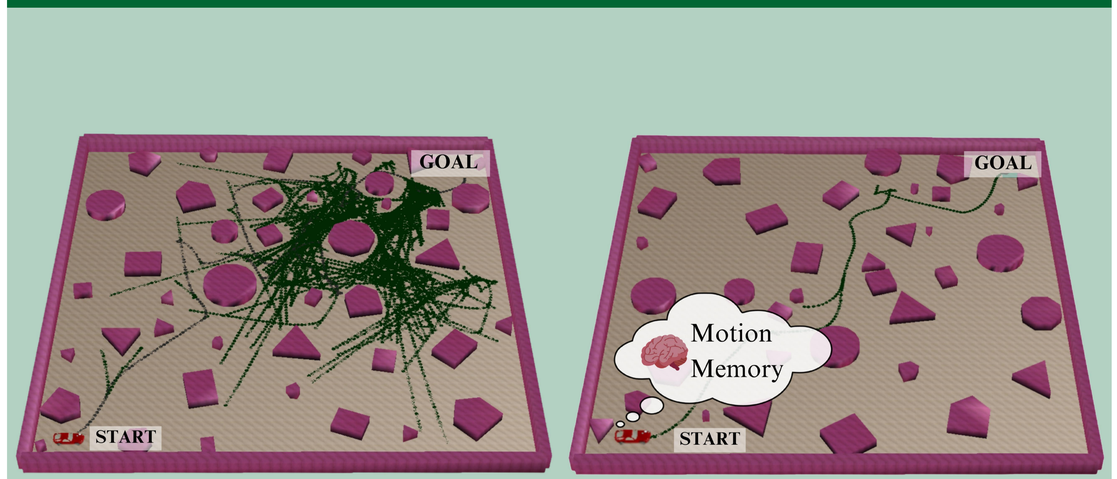
METHODOLOGY

- Augmenting Past Experiences with Hallucination
- Environment Generation
- Representation Learning

DATASET

- Three different types of environments: curves, random, and trap
- 100 different paths for the same start and goal state
- 1500 non-colliding environments for each path

Motion Memory allows different motion planners to reduce planning time when facing a new planning problem using past experiences.



RESULTS