



Fakultät für Informatik
Lehrstuhl für Echtzeitsysteme und Robotik

Get Me Out Of Here: Determining Optimal Policies

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Abstract—The abstract goes here.

I. INTRODUCTION

Remember the game Labyrinth, in which the game represents a maze. The field is build up by fixed and moving pieces showing walls and passages. The goal of the game is to rearrange the maze by moving rows of not fixed tiles and enable ones game character to find treasures and return them to goal tiles.

For reaching the goal in this game, a way for finding the shortest path to exit the maze has to be found. This can be achieved with classical pathfinding algorithms like Dijkstras Algorithm or Breadth-First Search, but also with **Dynamic Programming**, which I will be using in this Paper.

Therefore, I define a grid map $M = \mathbb{N}^{(n \times m)}$ containing of static walls $M(i, j) = \infty$ and exit(s) of the labyrinth.

II. FUNDAMENTALS

A. *What is Dynamic Programming*

B. *Richard Bellman*

C. *The Principle of Optimality*

- 1) *The fundamental approach:*
- 2) *Mathematical formulation:*

D. *Usage of Dynamic Programming in computer science*

1) *Which characteristics needs a problem in computer science to be solvable by Dynamic Programming:*

- a) *Overlapping subproblems:*
- b) *Optimal substructure:*

2) *How to apply Dynamic Programming:*

- a) *Memoization:*
- b) *Bellman equation:*

III. INTRODUCTION

This demo file is intended to serve as a “starter file” for IEEE conference papers produced under L^AT_EX using IEEE-tran.cls version 1.8 and later. I wish you the best of success.

mds

December 27, 2012

A. *Subsection Heading Here*

Subsection text here.

1) *Subsubsection Heading Here:* Subsubsection text here.

IV. CONCLUSION

The conclusion goes here. Lollo

REFERENCES

- [1] H. Kopka and P. W. Daly, *A Guide to L^AT_EX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.

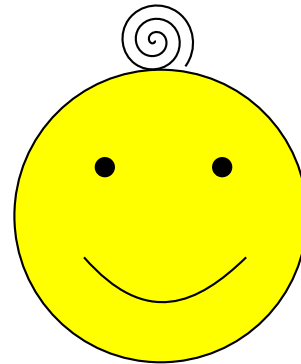


Fig. 1. A vector graphic loaded from a PDF file



Fig. 2. A bitmap graphic loaded from a PNG file